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TEXTILE WORLD

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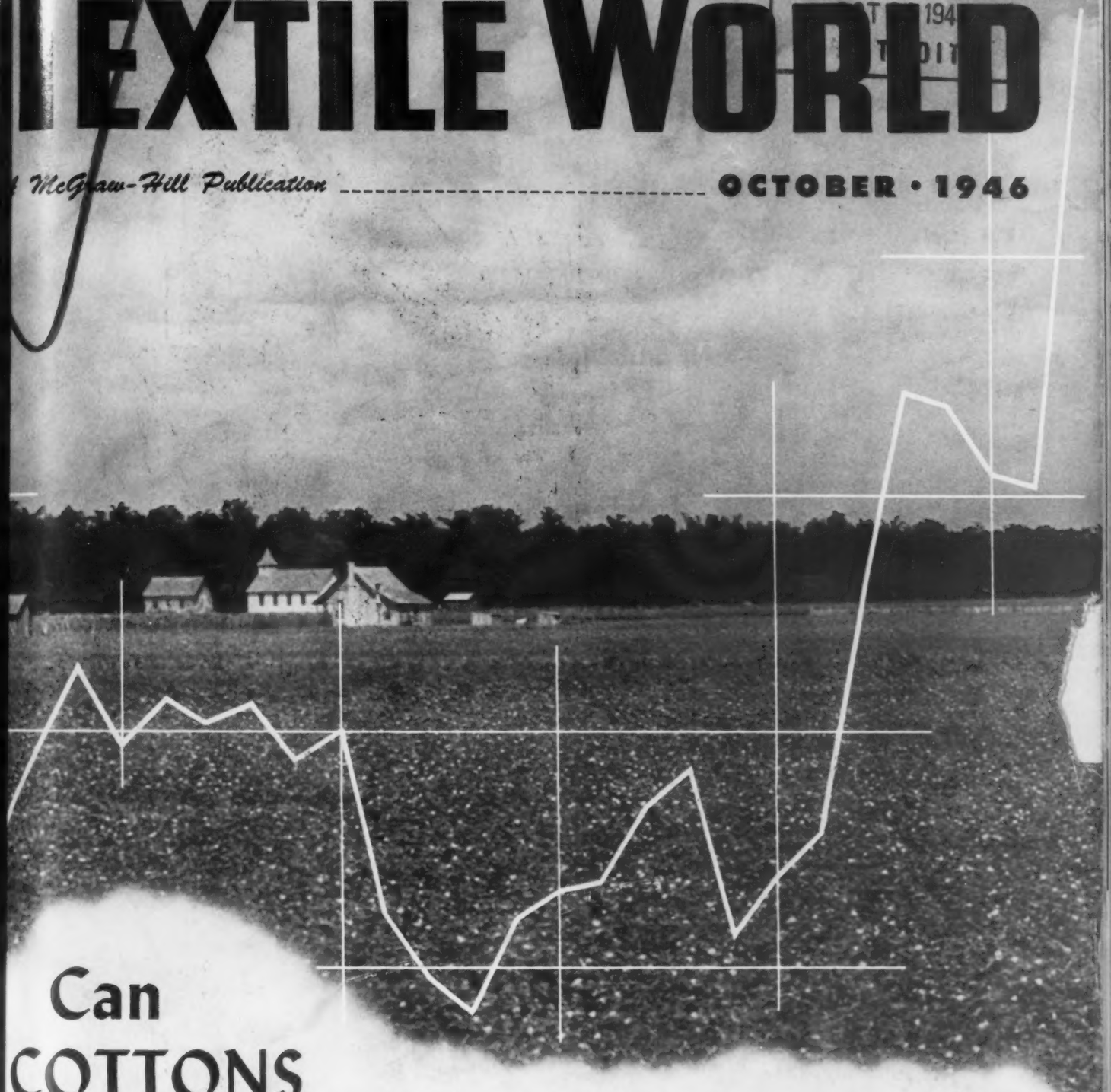

Can COTTONS Sustain New High Price Level?

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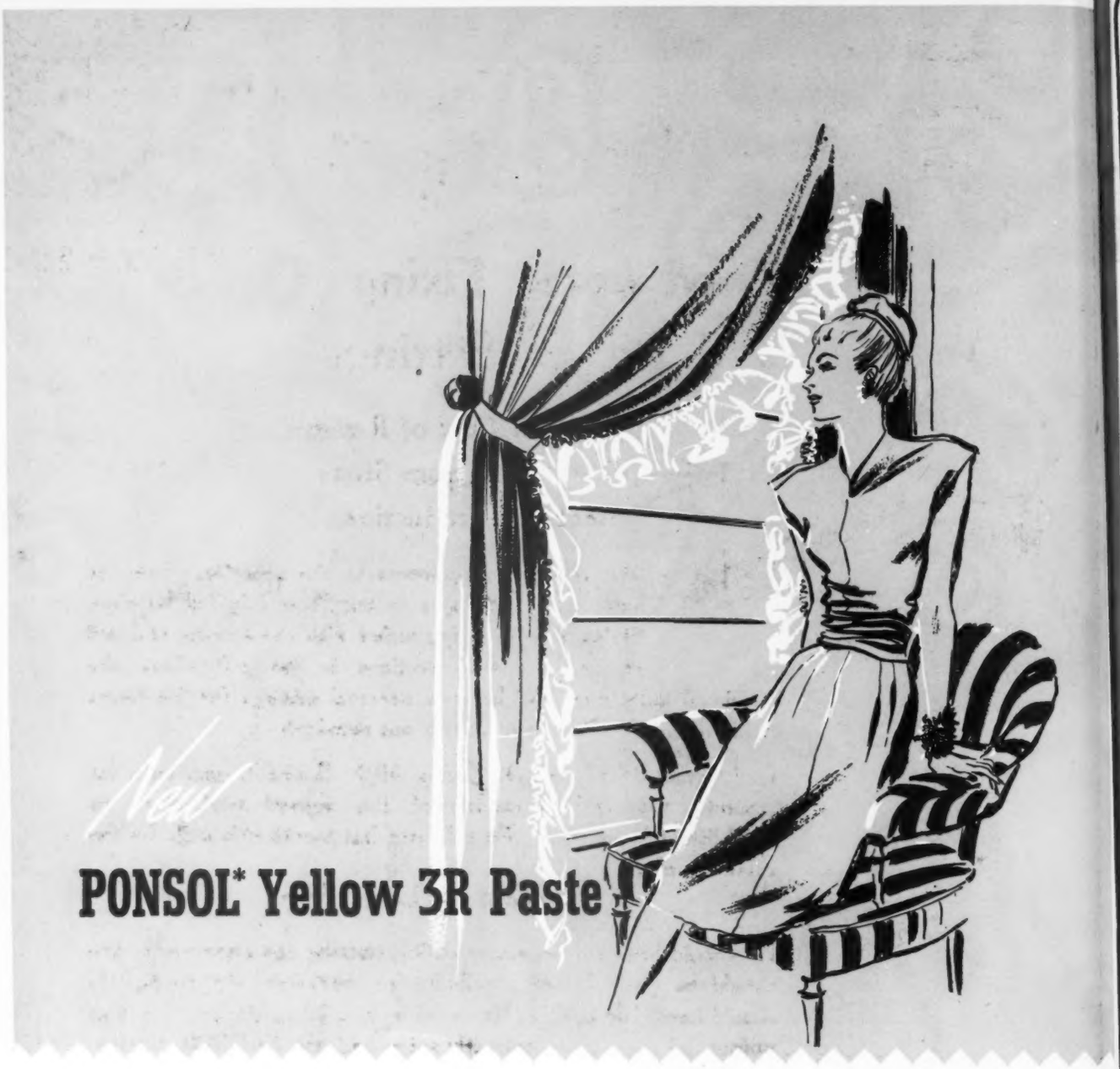

New

PONSOL* Yellow 3R Paste

Recommended for cotton and viscose-process rayon materials . . . for curtains, awnings, draperies, and upholstery fabrics, as well as dress goods and sportswear.

In addition to excellent fastness to light, good fastness to washing, chlorine, and crocking, PONSOL Yellow 3R Paste has good level-dyeing characteristics, a medium rate of exhaust, and can be applied in all types of dyeing equipment.

Our representatives will be glad to provide you with more information on this new product. E. I. du Pont de Nemours & Co. (Inc.), Dyestuffs Division, Wilmington 98, Delaware.

Du Pont Dyestuffs

DU PONT
REG. U.S. PAT. OFF.

*REG. U. S. PAT. OFF

BETTER THINGS FOR BETTER LIVING . . . THROUGH CHEMISTRY

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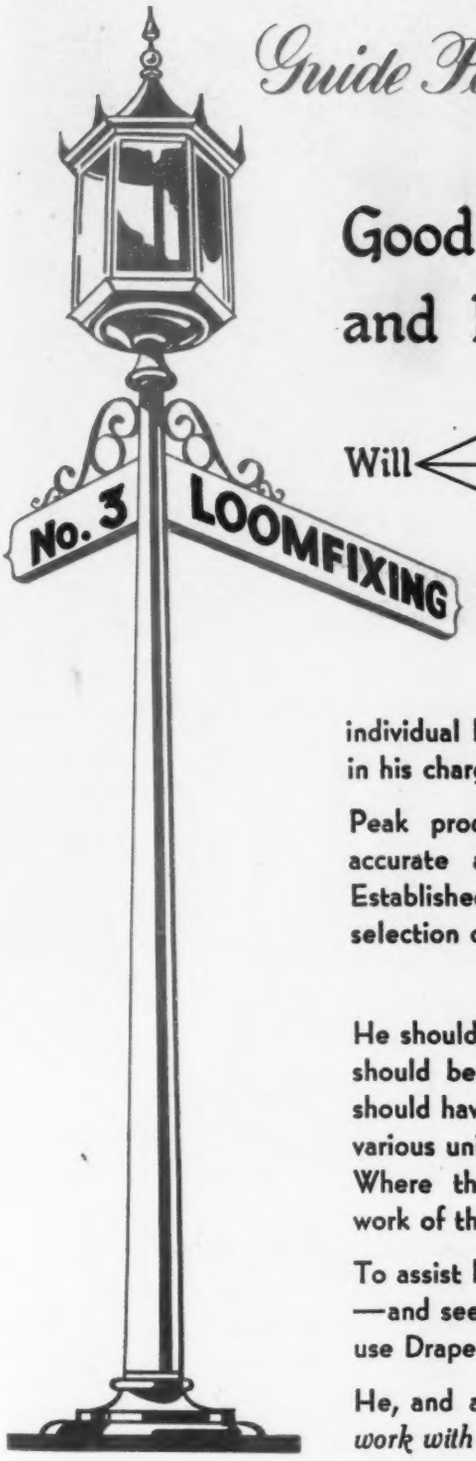
Guide Posts to Increased Production



Good Loom Fixing and Proper Settings

Will — Reduce Cost of Repairs
Will — Decrease Loom Stops
Will — Increase Production

Methods of fixing looms in the past have been as numerous as changes in our New England weather. Styles of loom fixing varied with the locality, the mill or even between sections in the mill where the individual loom fixer had his own personal settings for the looms in his charge. The rule of thumb was standard.

Peak production from X Series High Speed Looms calls for accurate and uniform setting of the several mechanisms to Established Standards. We told you last month this calls for the selection of a

Supervisor of Loom Fixing

He should have the necessary ability, training and experience. He should be given full responsibility for maintaining standards. He should have time to check the work as it is being done, to see that various units are being correctly set—*and are kept correctly set.* Where there is more than one shift he should coordinate the work of the fixers.

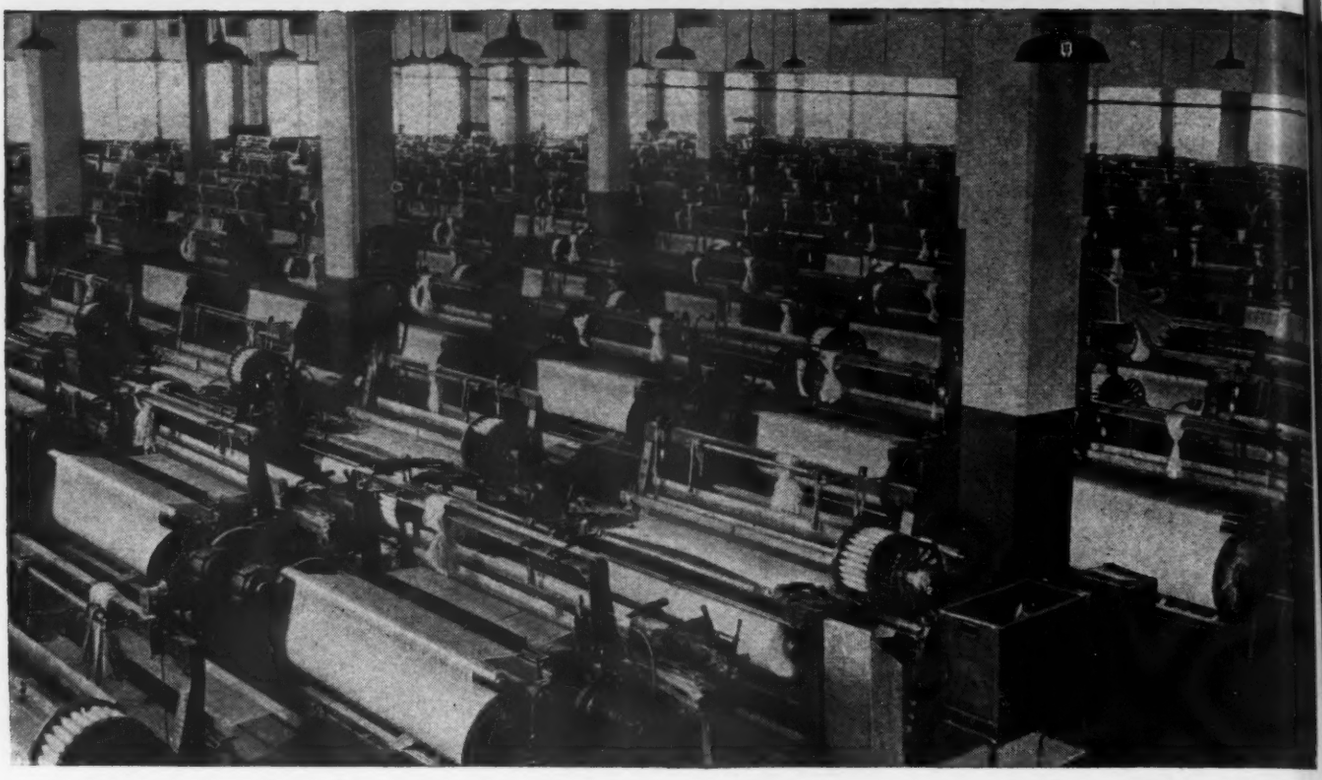
To assist him he should have a book of Standard Draper Settings —and see that each of his fixers has one and uses it. He should use Draper Loom Gauges. We sell them at a nominal charge.

He, and at least a selected number of his better fixers, *should work with Draper Erectors* when new looms are installed. These erectors are specialists on Draper Looms—have had years of weave room experience—and are ready to cooperate in every way possible.

Third in a Series

Of What Well-Managed Mills Are Doing to Get the Best Results in Weaving

DRAPER CORPORATION
HOPEDALE MASSACHUSETTS



MORE CLEANER YARDAGE

IN WEAVING, as in spinning, the faster your machinery operates the greater the danger of oil spotting *unless* you use a lubricant especially designed to protect against "throw"—*Texaco Stazon.*

Use *Texaco Stazon* for lubrication of loom cranks, top rolls and other fast-moving equipment. It *stays on* the bearing surfaces ...doesn't splatter, creep or drip...stands up under load shocks... does not form gummy deposits. It's stable and long-lasting . . . lubricates effectively with fewer applications.

To assure a higher output of clean yarn and fabric, operators everywhere use *Texaco Stazon* . . . have done so for years. You can apply this experience profitably to your own operation.

For Texaco Products and Lubrication Engineering Service, call the nearest of the more than 2300 Texaco distributing plants in the 48 States, or write The Texas Company, 135 East 42nd Street, New York 17, N. Y.

TEXACO

TEXACO Lubricants

FOR THE TEXTILE INDUSTRY

TUNE IN THE TEXACO STAR THEATRE EVERY SUNDAY NIGHT—CBS

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TEXTILE WORLD

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THE *Long-Range* VIEW

INEVITABLE DRIFT

The giant size of the textile industry precludes the possibility of any overnight—or even "overyear"—transfigurations; yet many observers, both within the industry and outside of it, are commenting on the changes which are taking place.

One outstanding change, evident to all because it has been so widely publicized, is the ever greater use of synthetic fibers; another is the adoption of many new finishes for yarns and fabrics; a third is the new machines and equipment which complement or replace older types; a fourth is a radical change in the type of personnel employed; but most important and probably least known of all is the increased importance of textile technologists in the industry.

The first three factors named are directly in the sphere of the technologists, while the fourth enters indirectly. Technologists as referred to here should not be confused with technicians. Technologists see and understand the wider implications of the new developments in the 30-century-old industry—although it is true that technologists depend for their very existence on technicians.

The day is rapidly passing when machine settings are made by judgment, when size formulas are judged by appearance, and when dye-bath temperatures are tested by feel. What has been called art or skill is being measured and is becoming a science.

Machine parts are rated by strain-gage tests, rather than by frequency of breakage; even the oscilloscope is used to study invisible forces which operate in the production of textiles. So much has already been discovered which influences the industry that any mill which does not lean heavily on its technologists will soon find itself obsolescent.

Technologists were not tolerated many years ago. Many of the earlier ones were sneeringly referred to as "experts" and defined as fools-away-from-home. Today, some technologists are plant officials, others are members of executive groups, although a few are merely tolerated, and some ignored. Note, however, the outstanding plants which lean heavily on technologists.

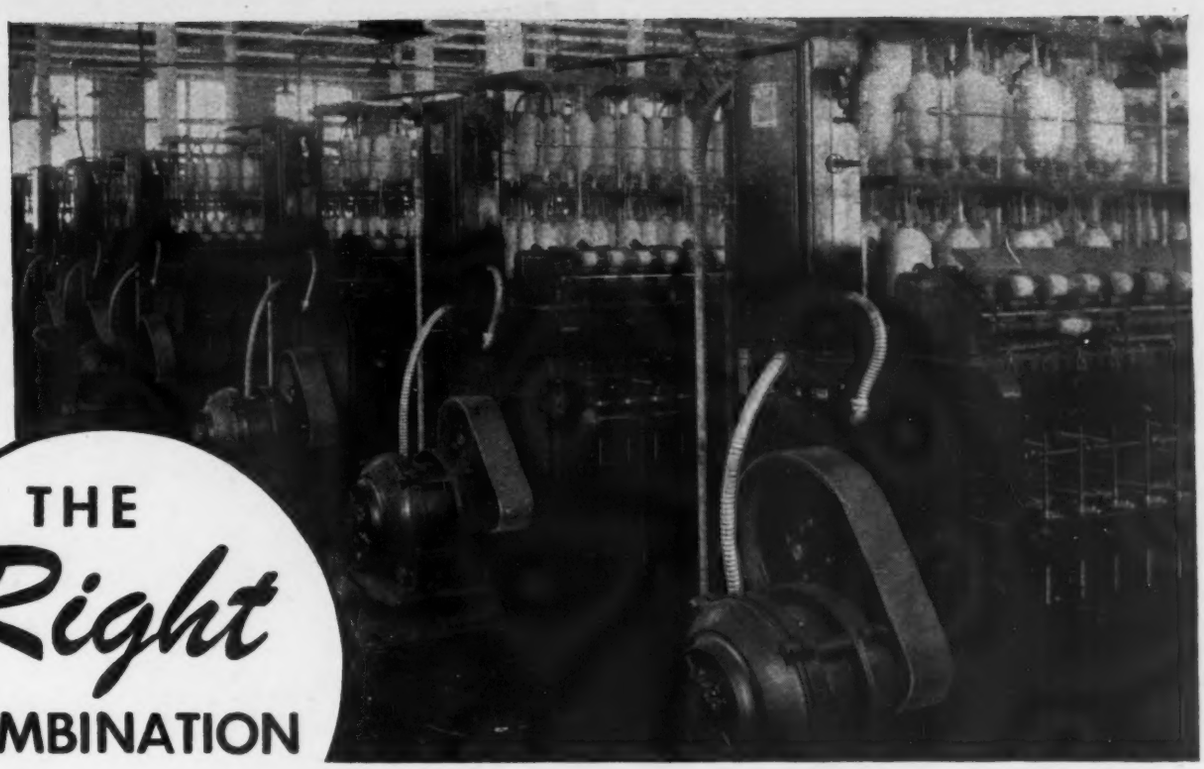
Of course, with astute financing and good selling, particularly in times such as these, mills can be financially successful even though technically decrepit. And there are mills which publicly display their technologists but do little more with them.

When new plants, new products, or changes are considered, someone must advise against buying improper equipment or manufacturing something that is only temporarily easy to sell. Someone must point out how whims on the part of a buyer can be costly; for example, a few less turns per inch can be costly for a mill if the result is a new lot with its special marking, special handling, a high proportion of tailings, additional waste, and disruption of plant balances. A technologist can demonstrate the expensiveness of many steps which, without him, might be taken. As textile manufacturing becomes more complex, a small change can have greater consequences, for good or bad. Guided by technologists, we are constantly going further and further away from plant operations based on rule-of-thumb methods.

The chief distinguishing trait of a bona fide technologist is his dependence upon facts rather than speculation, his insistence on measuring whether things are as generally believed—and then his recognition of the importance of his findings to the problem as a whole. Such a person may or may not call himself a technologist and may even be surprised to be referred to as one. Nevertheless, he is one of the mainstays of the type of textile industry which is developing. The fact that often a technologist upon whom a plant depends is not recognized by any such title does not detract from his importance; it merely makes the trend to more scientific management less easy to recognize.

To foresee the future of your mill, consider as a major factor its dependence upon a textile technologist whether called by that name or not.

C. H. Bendig



THE *Right* COMBINATION

for Individual Spinning Drives

TANNATE-Rockwood drives assure uniform yarn because they keep your spinning frames running smoothly and steadily. The Tannate-Rockwood unit is compact and is easily installed. The motor is mounted on a pivoted motor base and equipped with a Tannate flat leather belt. This installation requires little attention and gives trouble-free service year in, year out.

Tannate-Rockwood drives work equally efficiently whether driving horizontally, vertically or at an angle.

This is the drive for you to use. Consult Rhoads Engineering service—get more details.

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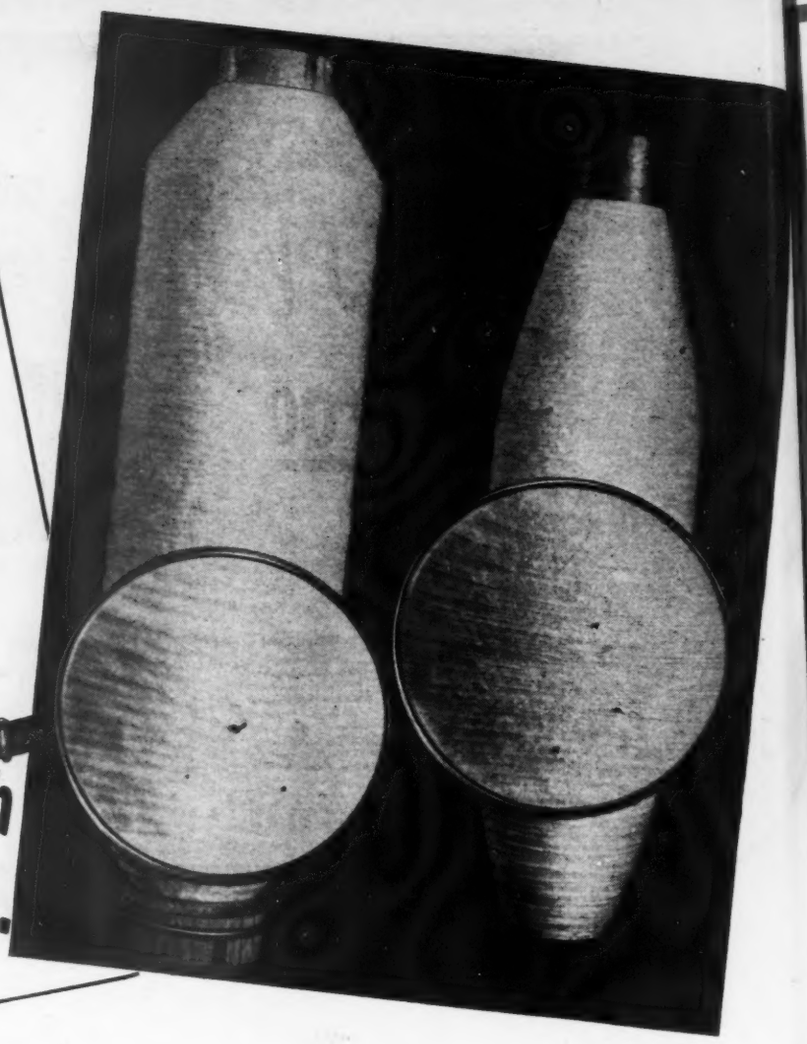
RHOADS *Tannate-Rockwood* SHORT CENTER DRIVE

3 ways to remove impurities before they reach this far . .



1 #11 DUST AND WASTE EXTRACTOR

2 CONTINUOUS STRIPPER

3 WASTE CONTROL SCREEN

The complete elimination of every single impurity in a finished yarn package is an achievement to be desired. But many of the impurities which do get through can be eliminated if proper steps are taken at certain strategic points.

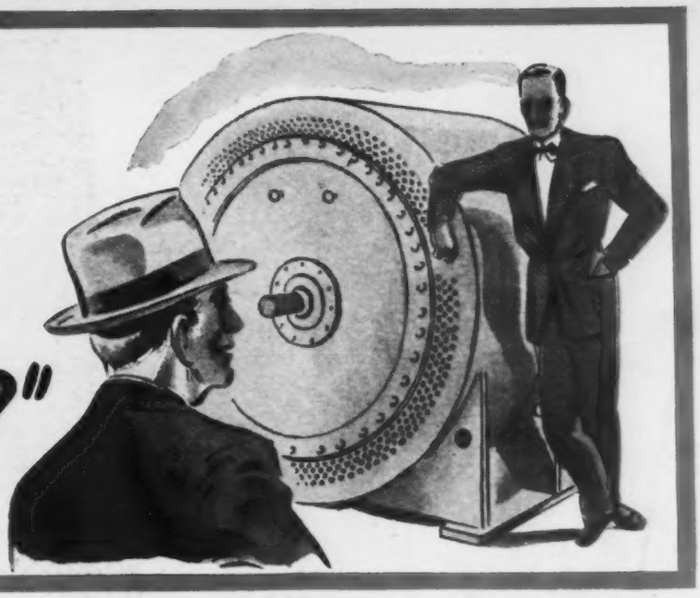
The Saco-Lowell #11 Dust and Waste Extractor is the first point of attack against these minute particles. Here the great bulk of fine peppery leaf and dirt is removed. The next point of attack is at the card. Here, by using a "combat team" composed of the Continuous Stripper and the Waste Control Screen, it is possible to keep the cylinder wire in such an active condition that there is a definite reduction in the amount of nep, leaf and other impurities in the web.

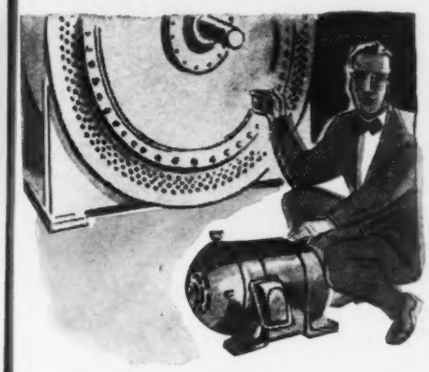
As a means of estimating the amount of impurities that are now "getting by" we suggest you make a nep and leaf count on ten square inches of cloth. Should you find this count too high our engineers may be able to make some helpful recommendations.

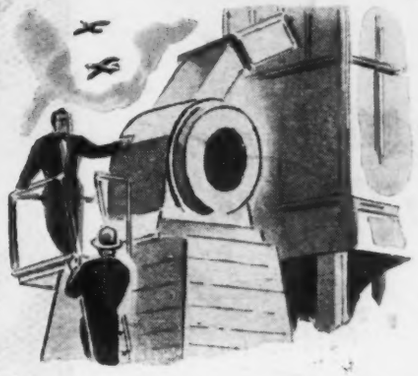
Saco-Lowell Shops

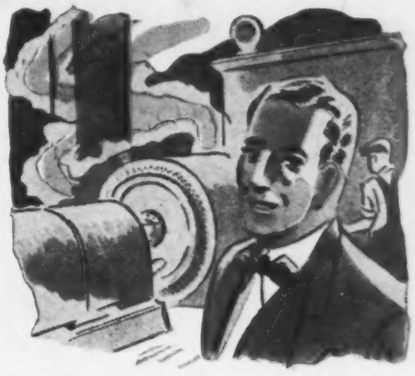
BOSTON, MASSACHUSETTS · Charlotte · Greenville · Atlanta

"Did You Say, Up to 2000 hp ...Weatherproof?"









"Right. In Allis-Chalmers' modern motor line we're now prepared to offer you a *complete range* of outdoor weatherproof, totally-enclosed motors all the way from small, standard ratings to sizes of 2,000 hp or larger."

"Why, That Means Then," our customer exclaimed, "in larger ratings they fill the need of power plant engineers who want to install equipment like draft fans *outside*, and thus keep down structure costs per kw capacity." Right again —and they fit into *other* industries too!

Chemical, for instance. Here cast iron motors have generally been preferred . . . because they stand up better under acid and alkali conditions. But now these *new* motors, with *new* design improvements, promise to provide several important operating advantages . . .

We've Re-designed the heat-transfer system to *improve ventilation.* We've *reduced maintenance* by making air passages not only more accessible, but practically *self*-cleaning as well. And we've *eliminated* liquid and dirt-trapping pockets. In the smaller ratings we of course offer our standard design.

Looking for a Good Motor?

SPECIFY "Allis-Chalmers"! For whether your job calls for a large motor like that above, or a small standard machine, you can be sure of getting two things when you specify "Allis-Chalmers:" 1) Exactly the right type and size motor; 2) consistent with the finest quality workmanship of which we are capable.

For the full story of liberal Allis-Chalmers motor construction, call our nearby dealer or sales office. ALLIS-CHALMERS, MILWAUKEE 1, WIS. A 2117

ALLIS CHALMERS

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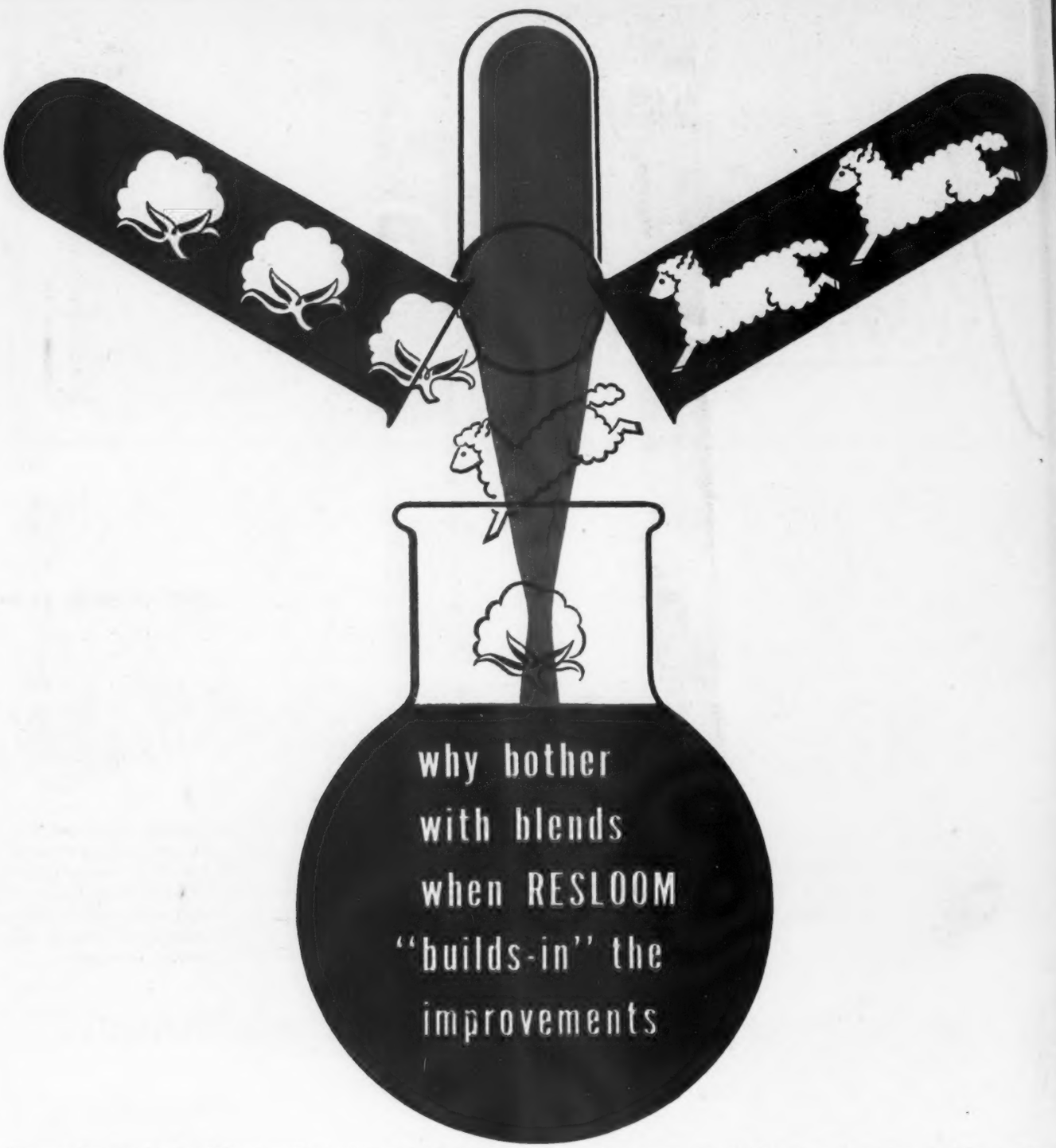

Progressive producers of fine textiles today are developing new fabrics by blending mixtures of cotton and rayon, rayon and wool, viscose and acetate rayons, as they vie for consumer favor.

But still greater opportunities lie ahead for the producer of fine textiles who "builds-in" superior and unique qualities with Resloom without the headaches of mixed fiber dyeing and finishing. Resloom imparts the resilience of wool to rayon fabrics and imparts new stability to cotton and to wool.

In fact, Resloomed rayons are lower in cost than rayon-wool blends and possess better stability and washability.

An Opportunity . . .

To produce a truly new fabric, build Resloom into a rayon-acetate blend to impart outstanding crush resistance, washability, and fabric stability.

The experienced help of Monsanto textile technicians is at your command. Also, full data and samples may be had for the asking; simply write: MONSANTO CHEMICAL COMPANY, 140 Federal St., Boston 10, Massachusetts.

Resloom: Reg. U. S. Pat. Off.

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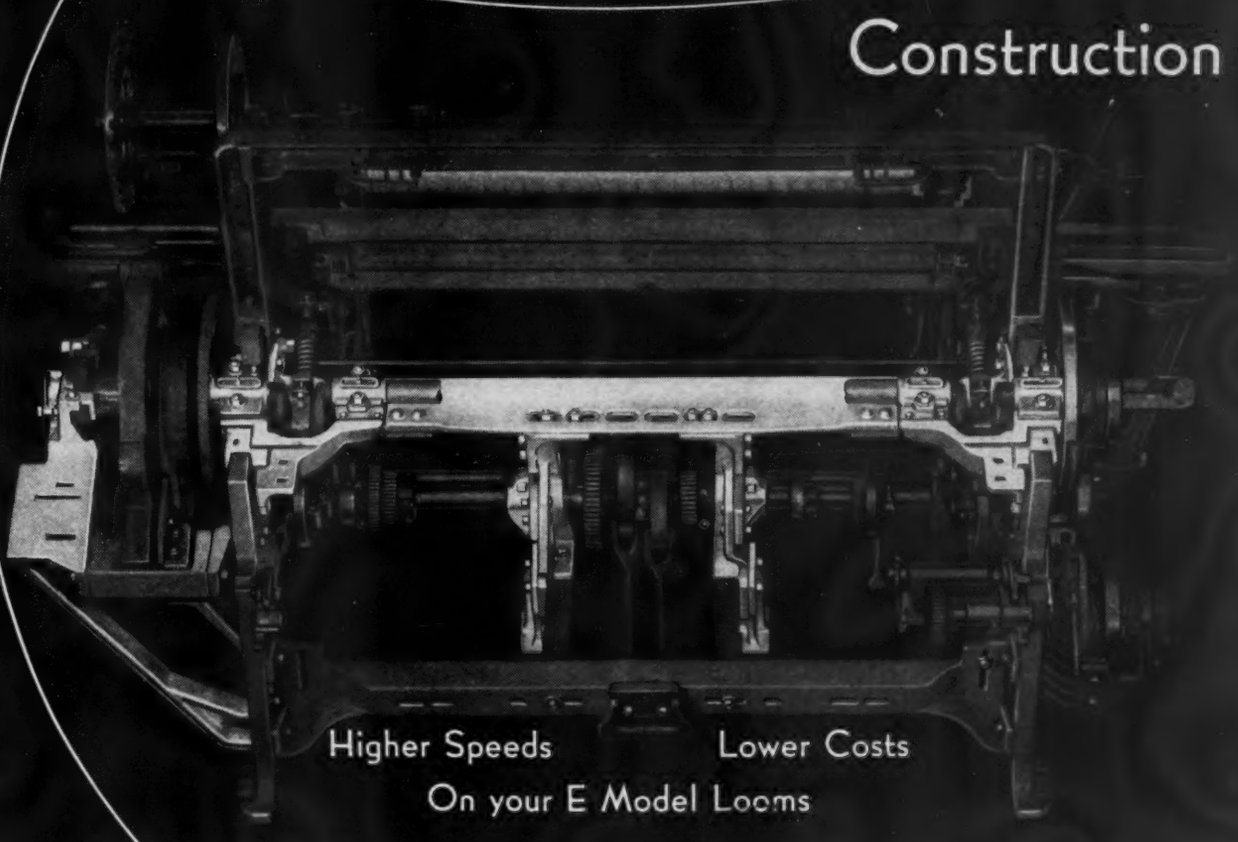
NEW AND IMPROVED

TOP GIRT

Construction



Higher Speeds Lower Costs

On your E Model Looms

This New Top Girt has the Improvements you asked for

3-piece Construction—more bearing surface to strengthen the Loomside—Machined to fit

New type Crank Shaft Boxes—that cannot get out of line

Weight of Girt carried on Top of Loomside —eliminating use of dowel pins

Allows use of Spring type Crank Arms—a necessity for High Speeds

Reinforces section of loomside and provides a new hole for Shipper Sleeve Stud

New Adjustable Cam Shaft Boxes allow meshing of Driving Gears without the necessity of vertical fitting

It is a Superior Product fashioned by the men who built your looms

Designed and Engineered by Draper Men to Draper Standards

RETAINING LEADERSHIP **DRAPER CORPORATION** THROUGH RESEARCH

another

New Wrinkle

with COLOR and TEXTURE

Texture and color are only a part of the Wrinkle story. Economy, durability, production time-saving are other parts of the story of the most versatile of all industrial coatings.

If you are not already using Wrinkle, it will pay you to investigate. And if you are among the thousands of users, you'll be interested in new developments in Wrinkle . . . for instance, in the synthetic rubber-base, and resin emulsion-base flexible Wrinkle coatings.

There are literally hundreds of controlled Wrinkle textures, and an unlimited variety of color combinations for every conceivable application to either flexible or non-flexible surfaces. No other industrial finishing material offers so much in distinctive decoration and protection.

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Flexible Wrinkle for coating paper, fabrics, rubber, plastics and artificial leather.

Any industrial finish manufacturer who maintains our standards is eligible for a Wrinkle license.

√ Office equipment, typewriters, adding machines, etc. √ Electric motors and tools. √ Tool chests and cabinets. √ Scientific and precision instruments. √ Photographic equipment. √ Castings and fabricated metal parts. √ Caskets.

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THE other books in this series are Part I, dealing with principal bearing types and fundamentals of mounting practice—and Part II, describing details of shaft and housing design, so important to good ball bearing service. Also available gratis. Ask for booklets BA and DD.

Please mention publication in which you saw this announcement. Thank you!

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NEW DEPARTURE • DIVISION of GENERAL MOTORS • DEPT. A, BRISTOL, CONN. • Branches in all principal cities

GET THE "LOAD" OFF YOUR MIND WITH AIR POWER

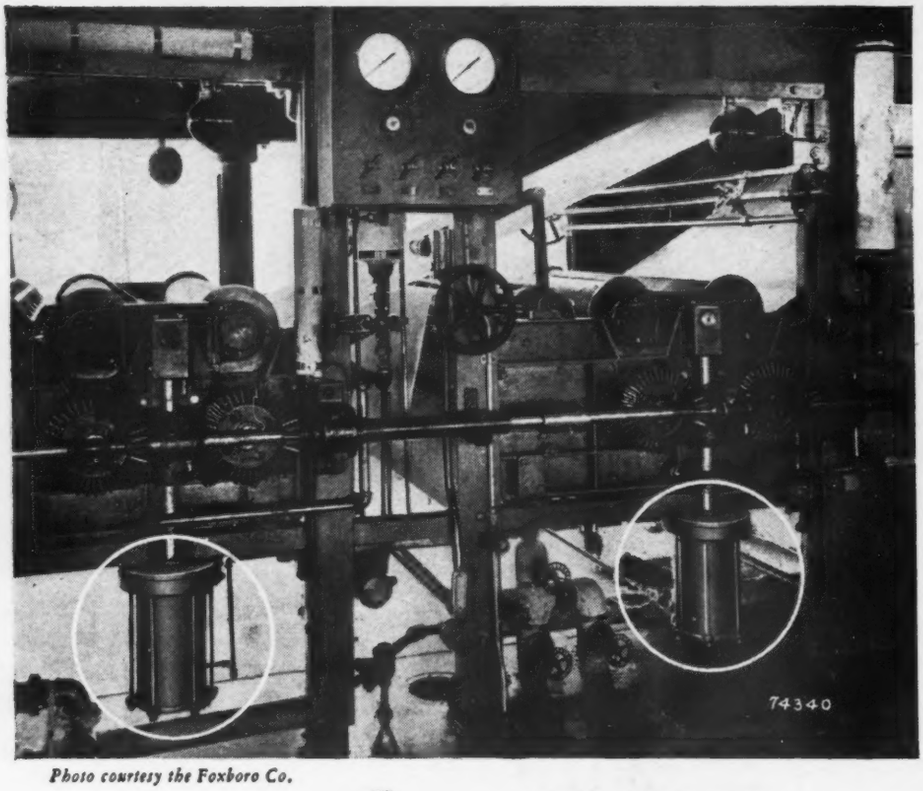


Photo courtesy the Foxboro Co.

Slasher Roll Loading is now on the growing list of textile mill jobs that are done best and cheapest with Air Power.

●

✓ Continuously automatic, compensating, cushioned, roll loading.

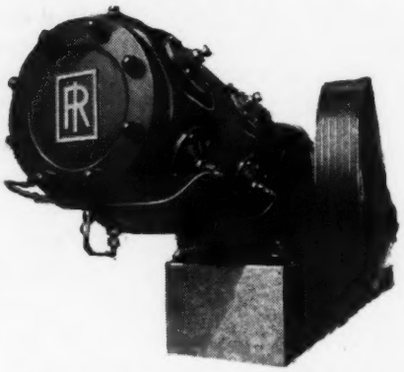
✓ Eliminates calculations, corrections, bouncing of rolls, overloading, supervision.

✓ Air powered cylinders and air controls take full charge.

●

OTHER SPOTS AIR-POWERED FOR SMOOTHER PRODUCTION AND LOWER COSTS:—

- HUMIDIFICATION
- GUIDERS
- WASHER ROLLS
- LIQUID AGITATION
- VISCOSE TRANSFER
- DRY CLEANER
- MERCERIZER
- SANFORIZER
- DYEING
- YARN CONDITIONING
- YARN DRYING
- BOBBIN STRIPPING
- KNOTTING
- CONVEYING
- CONTROLLING
- OIL ATOMIZING
- PAINTING
- HOISTING
- CLEANING MACHINERY
- CONSTRUCTION
- MAINTENANCE



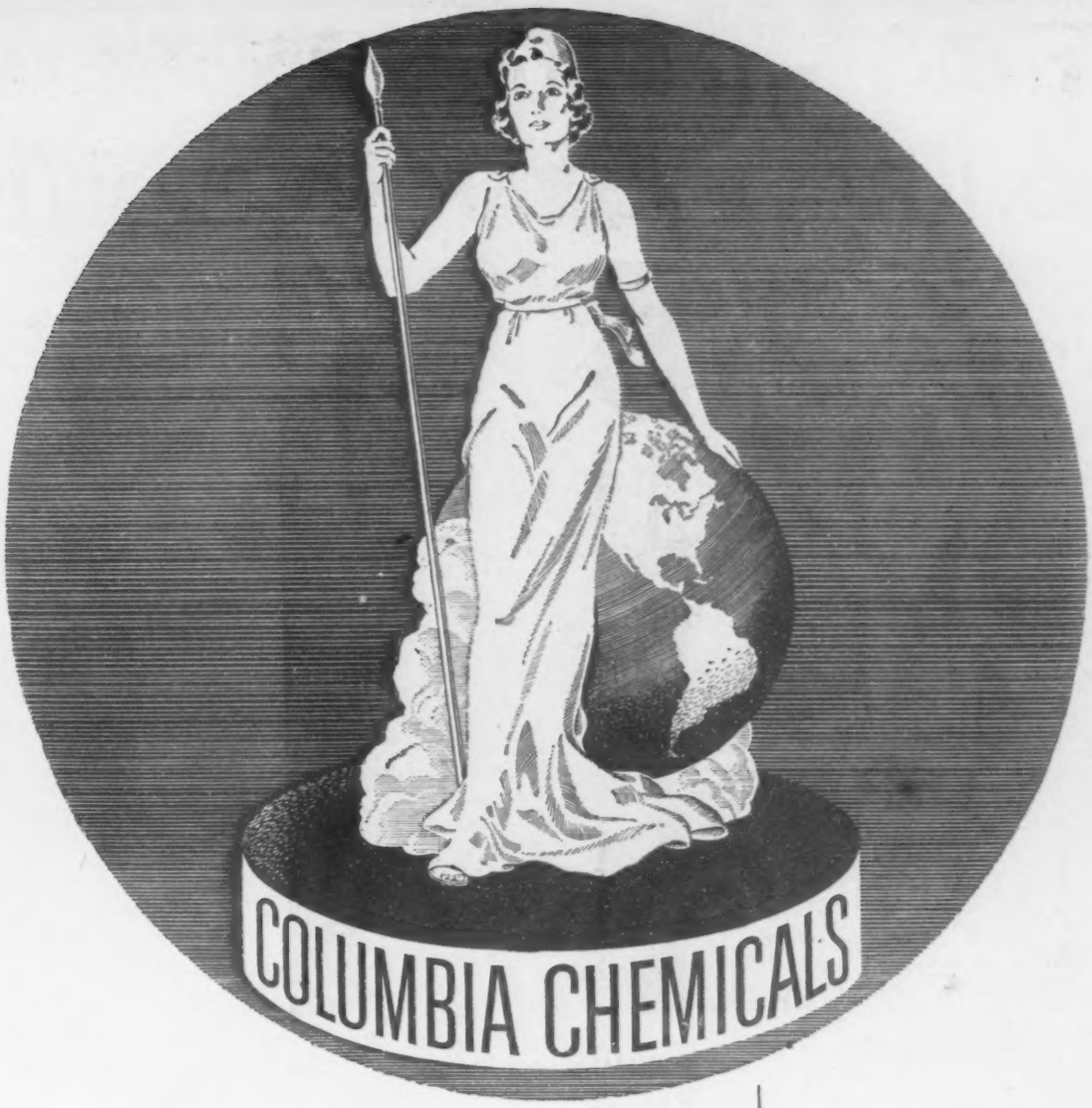
There's an I-R Air Compressor in a size and type to suit the requirements of any mill. Our engineers are always ready to discuss your problems with you.

SEVENTY-FIFTH IR ANNIVERSARY

COMPRESSORS • AIR TOOLS
ROCK DRILLS • TURBO BLOWERS
CONDENSERS • CENTRIFUGAL PUMPS
OIL & GAS ENGINES

Ingersoll-Rand

11 BROADWAY, NEW YORK 4, N. Y. 1-872



YOU may never see the Columbia Trade-mark on any finished product you buy, but more likely than not, Chlorine or Alkalies, or some of the other related products that Columbia produces, were used somewhere along the line of its manufacture. Columbia Chemicals are essential to many things—as ingredients—as aids to bringing about chemical reactions—or in the treatment of materials to change or improve their characteristics. So widespread has become the use of Columbia Chemicals, that today there is scarcely an industry that does not depend on them to make products better—more lasting—more useful.

COLUMBIA ESSENTIAL INDUSTRIAL CHEMICALS

Soda Ash · Caustic Soda · Liquid Chlorine · Sodium Bicarbonate · Pittchlor (Calcium Hypochlorite) · Silene EF (Hydrated Calcium Silicate) · Calcium Chloride · Soda Briquettes · Caustic Ash · Phosflake · Calcene T (Precipitated Calcium Carbonate) · Modified Sodas.

COLUMBIA CHEMICALS

PITTSBURGH PLATE GLASS COMPANY
COLUMBIA CHEMICAL DIVISION
FIFTH AVENUE at BELLEFIELD · PITTSBURGH 13, PA.

CHICAGO · BOSTON · ST. LOUIS · PITTSBURGH · NEW YORK · CINCINNATI · CLEVELAND
PHILADELPHIA · MINNEAPOLIS · CHARLOTTE · SAN FRANCISCO

THE MILL'S NO. 1 FLOOR-CLEANING PROBLEM

And Its Solution . . .

Floor-cleaning presents a diversity of problems throughout the textile industry, but there's one shared by most if not all mills—that of removing mineral oil from wood floors. Since the use of a mineral oil solvent is required to emulsify grimy oil for safe, fast removal, the solution to the problem calls for *wet scrubbing.*

A *Job-Fitted Finnell* and *Setol,* the mineral oil solvent specially compounded for machine-scrubbing, are an unbeatable team for wet scrubbing oily wood floors. Here's why. A *Job-Fitted Finnell* provides the greatest brush coverage consistent with area and arrangement of the floors and other conditions. And *Setol,* whose chemical action is *instantaneous, keeps pace with the speed of the machine.* This cuts operating time, which in turn reduces labor costs and saves on brushes.

Recognizing that no one machine can serve adequately the individual needs of all mills and other industries, *Finnell* offers *more than a score* of models and sizes. So whatever your problem—and whether it calls for wet scrubbing, dry scrubbing, or dry cleaning, or for waxing or polishing—there's a *Job-Fitted Finnell* to solve it effectually and economically.

The *Finnell* illustrated, a *Self-Propelled Scrubber-Vacuum,* is a complete cleaning unit *all in one.* It applies the cleaning solution (or scouring powder), scrubs, rinses if required, and picks up. Has a cleaning capacity up to 8,750 sq. ft. per hour! *Finnell* also makes a full line of *Cleansers, Sealers,* and *Waxes,* as well as *Mop Trucks* and other accessory equipment.

For consultation, free floor survey, or literature, phone or write nearest *Finnell* branch or Finnell System, Inc., 1910 East St., Elkhart, Ind. Canadian Office: Ottawa, Ont.

FINNELL SYSTEM, INC.

Pioneers and Specialists in

FLOOR-MAINTENANCE EQUIPMENT AND SUPPLIES

BRANCHES IN ALL PRINCIPAL CITIES

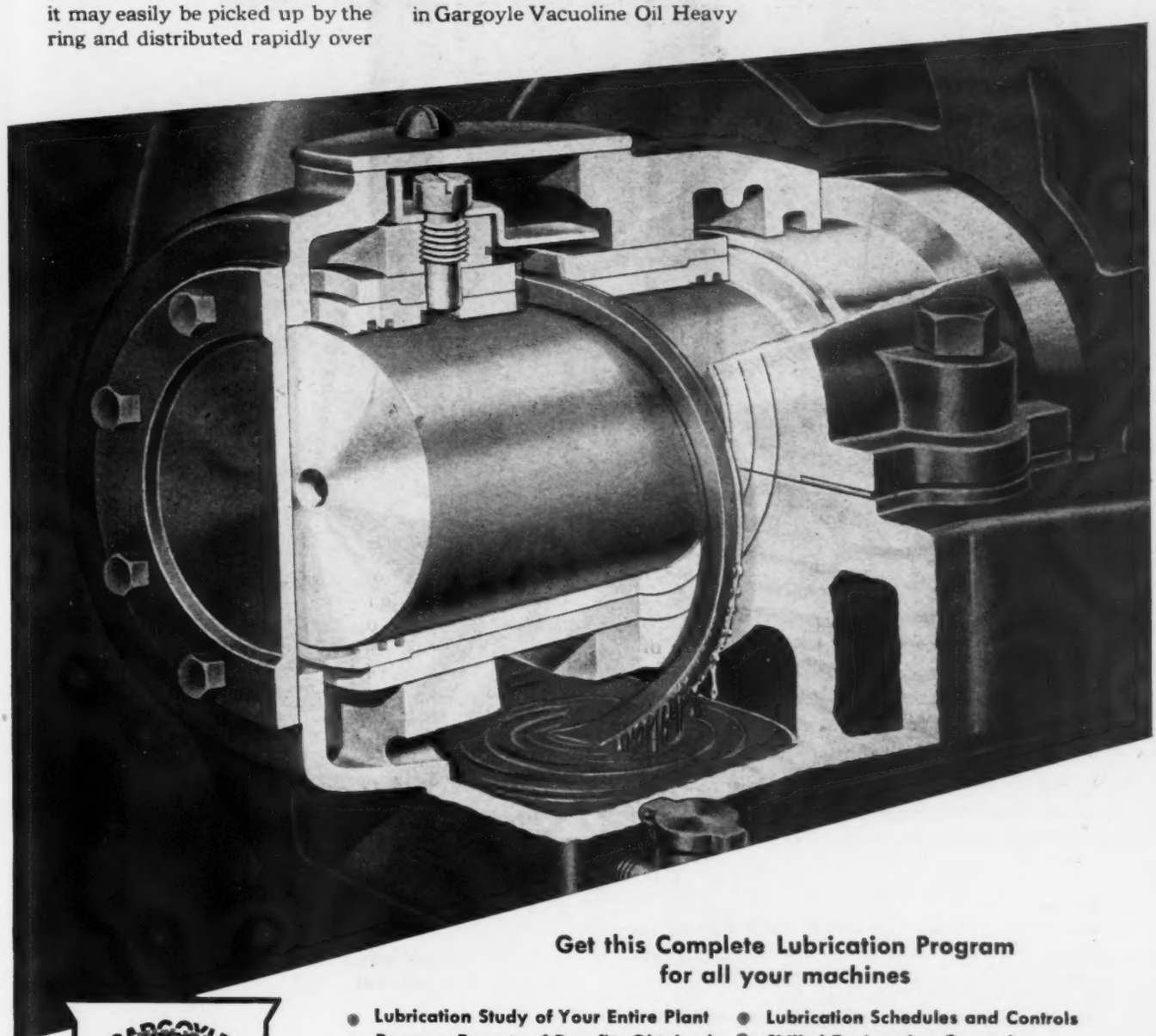
In electric motors—
it's *Staying Power* that counts!

AN electric motor demands lubrication with the same "staying power" that's built into the motor itself.

And that's not as simple as it seems! Take this ring-oiled bearing, for instance. The oil you see must be of correct fluidity, so that it may easily be picked up by the ring and distributed rapidly over the bearing. But—most important—*it must stay that way!* Even though it's used over and over again, it must not thicken so that ring action is retarded, or form deposits that may stop the ring and starve the bearing.

You'll find this "staying power" in Gargoyle Vacuoline Oil Heavy Medium. It has unusual chemical stability—resists change and keeps its rich lubricating qualities through long periods of use.

For grease-lubricated electric motor bearings, the same reliable performance is offered by Gargoyle Greases BRB.



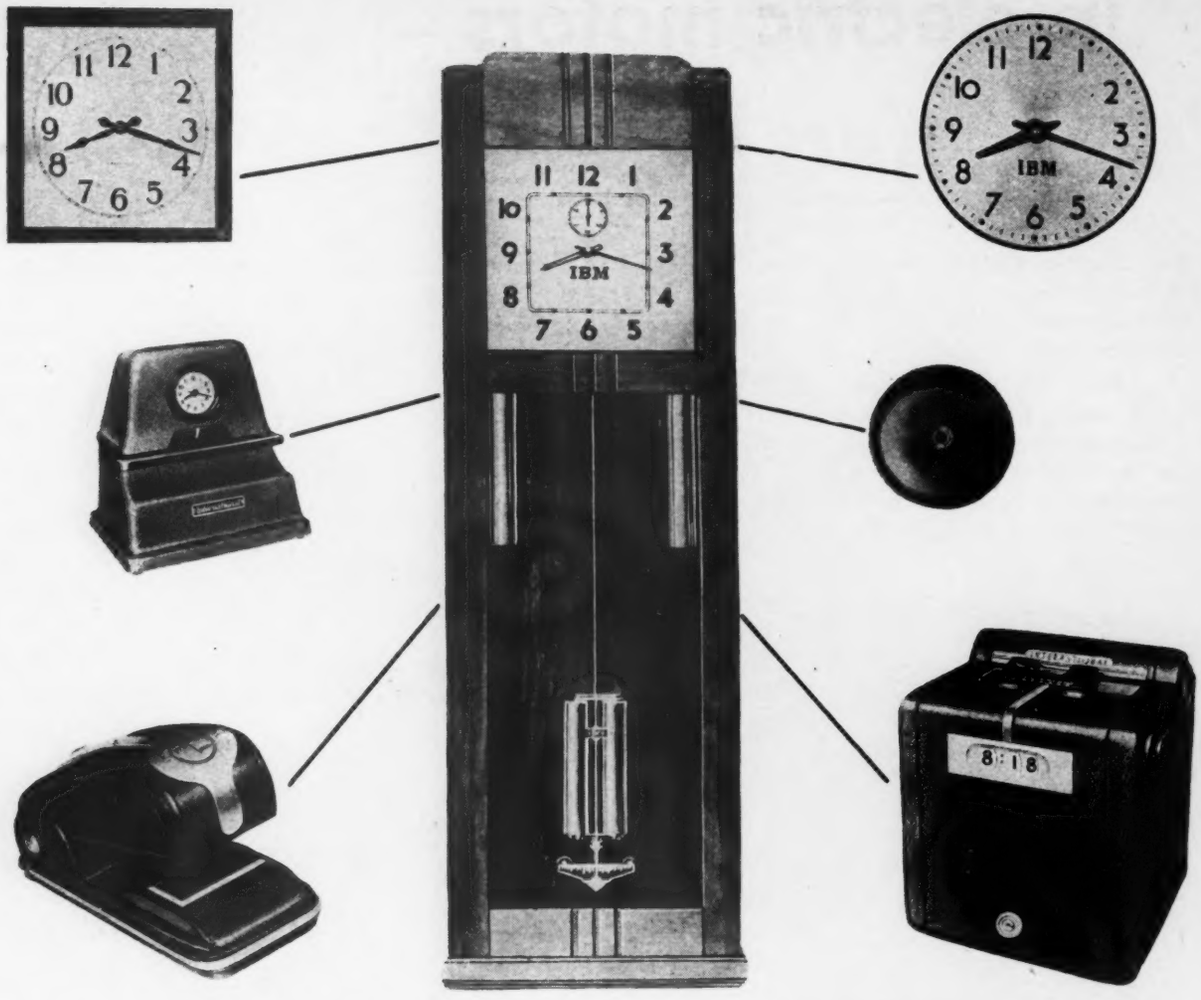
Get this Complete Lubrication Program for all your machines

- Lubrication Study of Your Entire Plant
- Lubrication Schedules and Controls
- Progress Reports of Benefits Obtained
- Skilled Engineering Counsel
- Recommendations to Improve Lubrication

GARGOYLE Lubricants

Socony-Vacuum Oil Co., Inc.

and Affiliates: Magnolia Petroleum Co., General Petroleum Corp.



One Accurate Time

throughout your entire mill

Every department, every office, every building operates on the same accurate time when it is equipped with the IBM Self-Regulating Electric Time Indicating System.

An IBM Master Time Control "manages" your entire timing operation with split-second accuracy, checks each secondary clock once each hour and coordinates it with the Master.

Shifts come and go, their movement based on identical time. Each employee knows at a glance when to expect the change-shift signal. Uncertainties and confusion caused by time inaccuracies are eliminated.

The Master Control coordinates time records, too, through its "management" of IBM Time Recording devices. Of many types, these include Attendance Time Recorders, Door Recorders, Job Time Recorders. IBM Systems also provide for coordinating signaling devices employing bells, buzzers, gongs, horns or sirens.

IBM's complete and fully responsible advisory service is yours without obligation.

IBM

TIME RECORDERS AND ELECTRIC TIME SYSTEMS

Electric Punched Card Accounting Machines—Electric Typewriters

International Business Machines Corporation, World Headquarters Building, 590 Madison Avenue, New York 22, N. Y.

SANDOZ PRESENTS *The color achievement of the month*

Future Heirloom BY LEES

Reds of ruby and garnet . . . blues of sapphire and turquoise . . . emerald and jade and topaz — these are the colors of the East that inspire the designs of priceless Oriental rugs.

All these fabulous colors . . . in the very designs of rare Orientals, Early American and Modern . . . are now brought, by Lees, to those men and women who find a fascinating hobby in creating hooked rugs.

Sandoz congratulates James Lees & Sons Company, spinners of Minerva and Columbia Rug and Hand-Knitting yarns. And it is a compliment to Sandoz to have such a leader as Lees turn to Sandoz for colors that enrich these yarns.

From Sandoz laboratories come dyes and chemicals that can be counted on for technical perfection and efficiency in handling. For example, the new Metomega Chrome Green BLL and Metomega Chrome Grey 2GL have extreme fastness to both mill and wearing conditions. They are ideally adapted to the simple and time-saving Metachrome method and are especially suited, because of their level-dyeing characteristics, for all wools.

For acid, chrome or direct dyes . . . or auxiliary chemicals . . . for both natural and synthetic fibres . . . be guided by the successful "color achievements" you have been seeing in these Sandoz advertisements.

Sandoz application laboratories are located in New York, Boston, Philadelphia, Los Angeles, Charlotte, Toronto, where stocks in wide range are carried. Other branches are in Chicago, Paterson and Providence.

SANDOZ CHEMICAL WORKS, INC., 61 VAN DAM STREET, NEW YORK 13, N. Y.

SAND *thinks ahead with textiles* S SANDOZ

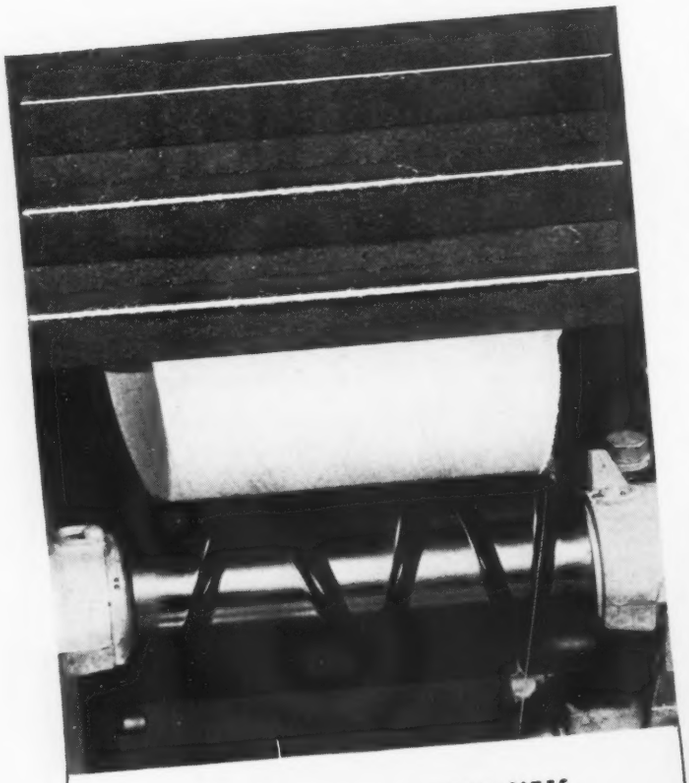
More Cones From Your Winding Room
More Compliments From Your Customers

The Roto-Coner* gives you greater production, and Roto-Cones give your knitting mill customers better performance.

The machine's higher winding speed, ease of operation, and freedom from breakdown lower your cost of winding. The superiority of the cones, as measured in terms of fewer press-offs, creates customer satisfaction.

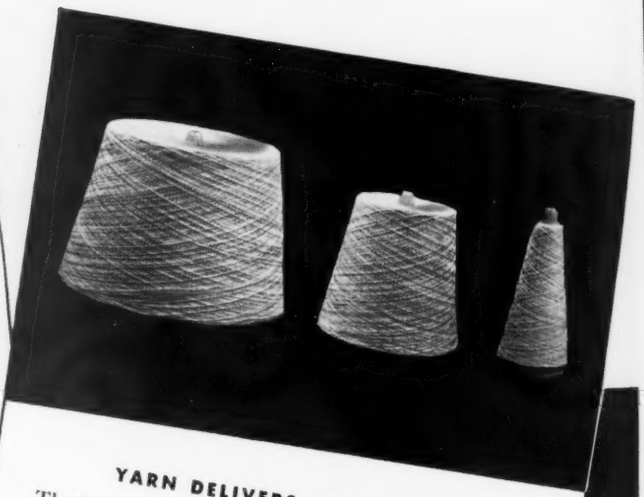
Write for Bulletin 144, addressing Universal Winding Company, at Providence, Boston, Philadelphia, Utica, Charlotte, Atlanta, Chicago, Los Angeles, Montreal or Hamilton.

*Reg. U. S. Pat. Off.



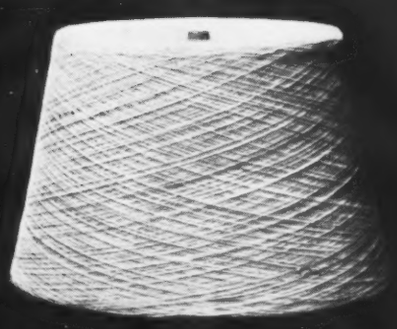
ONE SPEED FOR ALL YARN SIZES

The Roto-Coner's* exclusive method of driving the package and traversing the yarn eliminates the disadvantage of cams, with their speed limitations. Paper cones are wound at 550 yards per minute, and there is no need to slow down the machine when winding coarser counts. One standard groove arrangement gives a minimum number of winds for all sizes — no adjustments needed, no danger of inequalities from spindle to spindle.



YARN DELIVERS MORE EASILY

The lay of yarn on Roto-Cones is steep-angled at all diameters for free delivery. Stitches at the base end are eliminated by the quick reversal of yarn at the ends of the traverse which prevents piling up. The yarn is free from roll cuts, because the Roto-Coner* has no slip drums to nip the yarn, and contains no roughed yarn, because the Rotary Traverse revolves in the same direction as the yarn.



ROTO-CONER* LEESONA REG. U.S. PAT OFF.

Open-Wind Cones for Knitting

WARPING CONES · DYEING PACKAGES · PARALLEL TUBES FOR TWISTING

WHEN A DIFFERENCE IN

Speed

MAKES A DIFFERENCE IN

Profit

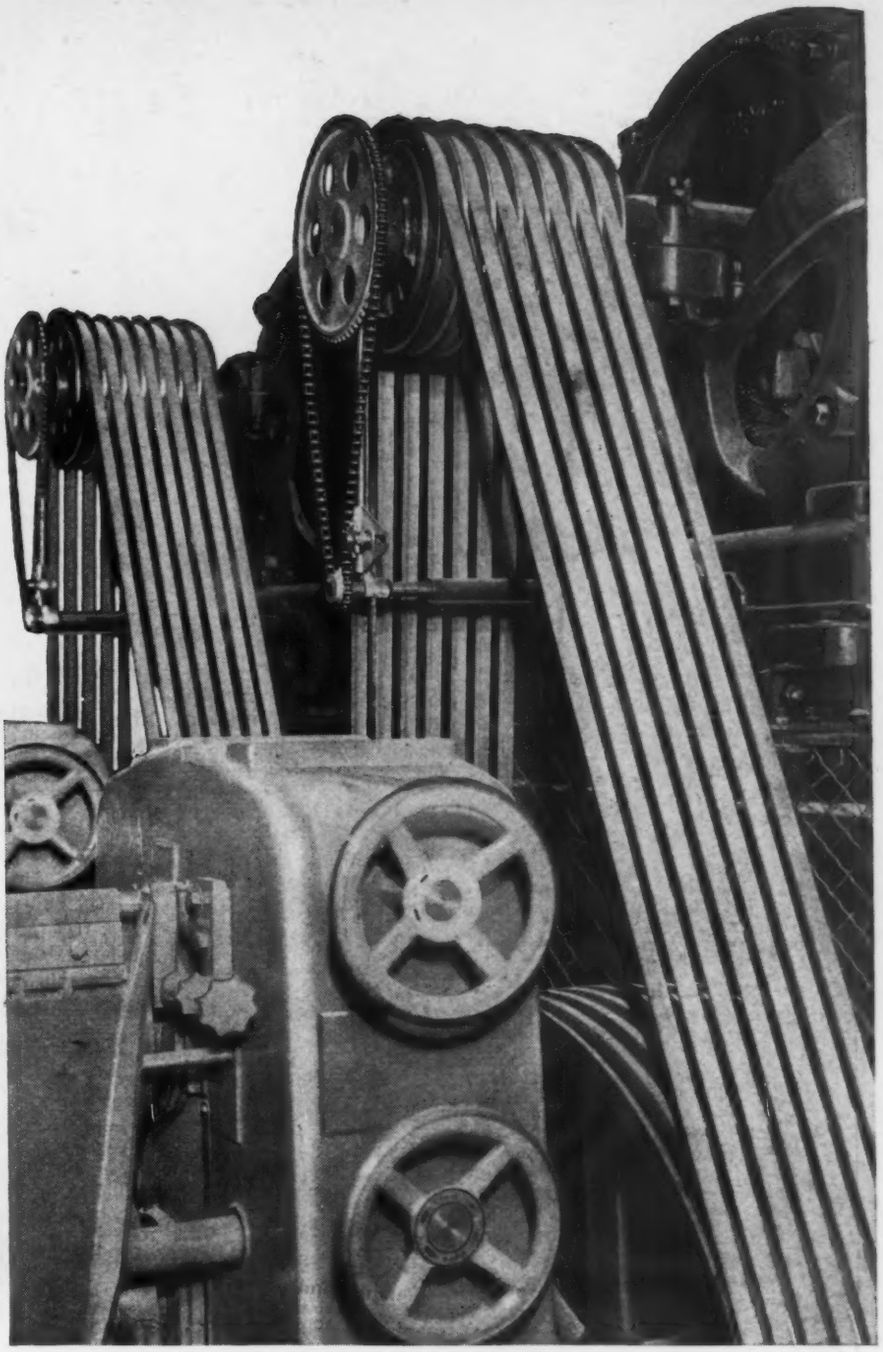
—When you can get greater efficiency, economy or output from a machine through flexible, accurate control of its operating speed — use a TEXROPE VARIABLE SPEED DRIVE! No special motor or costly reduction gears to install. In many cases, the only change required is to replace the regular drive sheave with a TEXROPE Vari-Pitch Sheave.

TEXROPE Variable Speed Drives

Here's a wide range of equipment to meet every need: TEXROPE Vari-Pitch sheaves for stationary or motion control — TEXROPE Wide-Range Vari-Pitch Sheaves and V-Belts — Speed Changer units. Speed variations up to 375% are possible. Ask your nearest Allis-Chalmers office or dealer for bulletin No. B6082-A.

V-Belt Drive Headquarters

Your A-C dealer has a full line of V-Belt Drive equipment—TEXROPE Super-7 V-Belts, sheaves and Variable Speed Drives. Get all your needs from one reliable source . . . from the originators of industry's Multiple V-Belt Drive. ALLIS-CHALMERS, MILWAUKEE 1, WIS.



(ABOVE) TEXROPE Vari-Pitch sheaves for motion control. They give smooth speed variations up to 25% on these roller mills used in the manufacture of soap chips. Changes in speed are made without stopping the machines.

"MAGIC-GRIP" Sheave for fast changes

Here is the standard heavy-duty sheave for fast, easy mounting and demounting. *Sheave comes completely assembled.* Simply slip it on the shaft, move it to exact alignment, and tighten three cap screws. It's locked on the shaft with the grip of a vise — yet can be removed just as easily. No hammering, filing or reaming. No set screws to damage shaft. A2103

ALLIS-CHALMERS

One of the Big 3 in Electric Power Equipment — Biggest of All in Range of Industrial Products

TEXROPE V-BELT DRIVES

Elements of Fabric creation V
Take a "dab" of Durene, the cotton yarn that is "four ways better"... or choose Weartwist, the fine domestic mercetized lisle. Either of these Aberfoyle yarns will make the portrait perfect: finer fabrics, longer wear, outstanding beauty. And Aberfoyle yarns make fabric creation easier, obtain better results... because Aberfoyle takes advantage of every new technical development and brings you, always, an improved yarn.
MADE OF Weartwist YARN MERCERIZED COTTON
Made of Durene® multi-ply mercerized combed cotton yarn
4 WAYS BETTER than ordinary cotton yarns
EXTRA COMFORT ---more absorbent
EXTRA STRENGTH ---longer wear
EXTRA QUALITY ---lasting lustre
EXTRA SERVICE ---easy to wash
NEOPHIL
ABERFOYLE MANUFACTURING COMPANY
123 South Broad Street, Philadelphia, Pa.
—and in the South
ABERFOYLE MANUFACTURING COMPANY
Belmont, North Carolina
Representatives in principal textile centers of the world
ESTABLISHED 1883
aberfoyle
AMERICA'S OLDEST MERCERIZERS
Durene

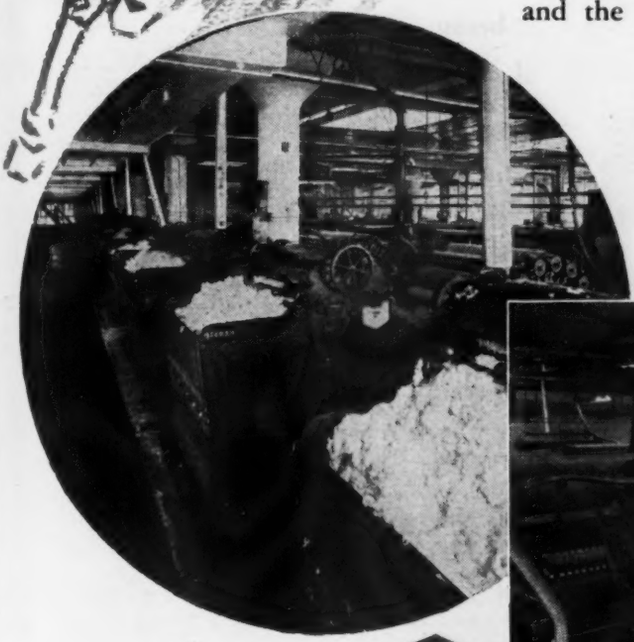
Leading from the start . . .

. . . and still out in front!

WHITIN WOOLEN CARDS

Whitin Woolen Cards have long been acknowledged leaders in their field. Not only before the war — or during the war — but right now, in 1946, they are still out in front. This leadership is based on a firm foundation — a foundation of 3 basic elements, superior design, expert workmanship and the highest quality materials.

In actual operation, these basic elements produce direct benefits through better carding and higher productions. In addition, their trouble-free operation reduces maintenance to a minimum. Don't be satisfied to "place" or "show"— put your money on the "Winner".

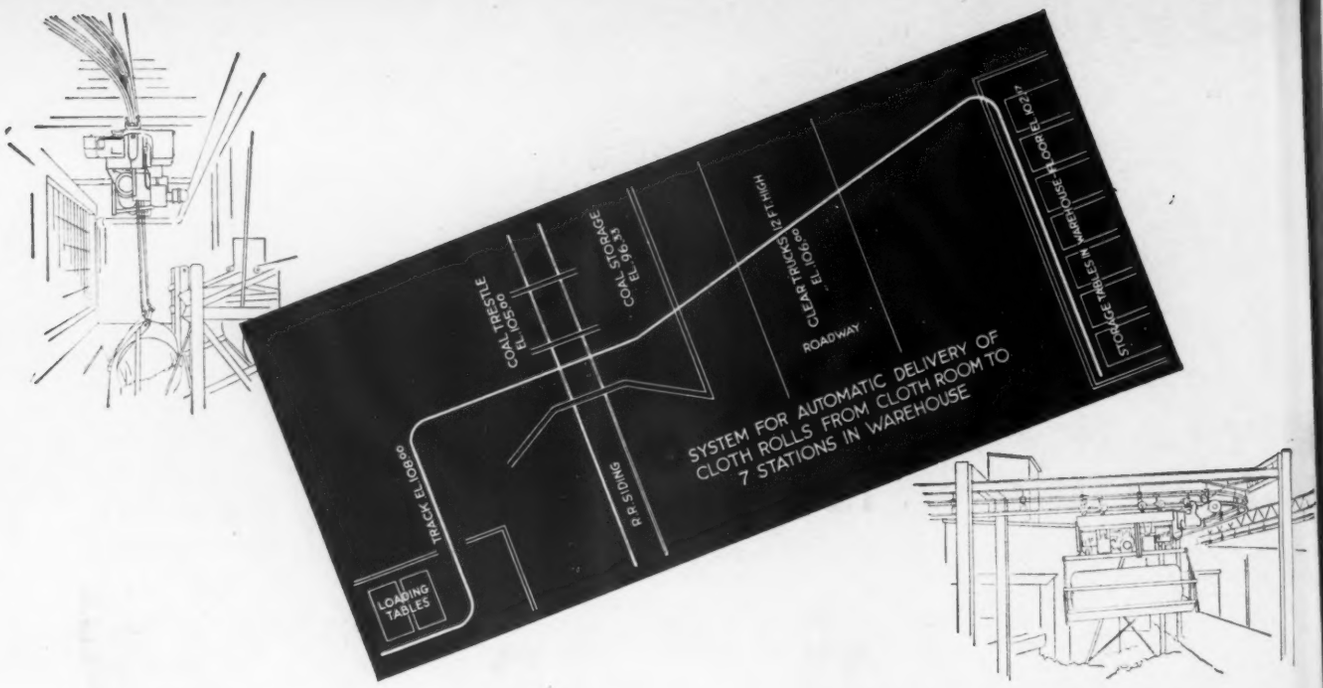


Mill installation views at the Excelsior Mill of Deering, Milliken Co. at Union, S. C.

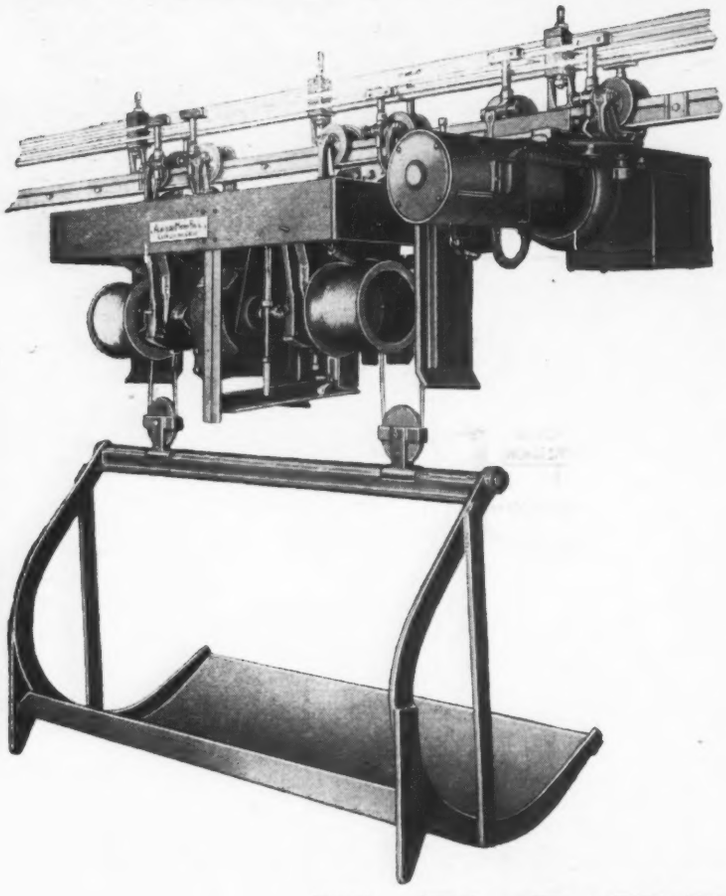
Whitin MACHINE WORKS

WHITINSVILLE • MASSACHUSETTS

CHARLOTTE, N. C. ATLANTA, GA.



10 Years of Automatic Operation



AUTOMATIC handling is not new with American MonoRail. This system has been in operation over 10 years. It has been continuously operated day-in and day-out with remarkably few replacement parts.

The carrier picks up rolls of cloth from special tables in the mill. Carrier then travels 300 feet over a heavy grade into the warehouse to deposit the roll at one of seven tables. The system is controlled from a central panel which can be set for 20 consecutive trips without interruption.

Whatever your handling problem may be, there is an American MonoRail System best suited to your individual needs. Consultation in connection with any handling problem is available without obligation.

THE AMERICAN MONORAIL COMPANY

13108 ATHENS AVENUE — CLEVELAND 7, OHIO

EXTRA FRICTION IN THESE CORK COTS

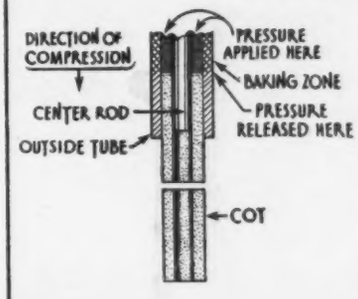
eliminates eyebrows

SPINNING and roving tenders spend less time picking clearers when you equip your frames with Armstrong's Cork Cots. These superior roll coverings not only produce a minimum of clearer waste, but their extra friction carries this waste well back onto the clearer boards. No eyebrowing occurs.

The resilience and uniformity of Armstrong's Cork Cots result in fewer ends down per thousand spindle hours, so your operators do less piecing up. These cots also recover quickly from most laps or hard ends. And because these cots are seamless, they have no hard or soft spots to grip the yarn unevenly.

Ask your Armstrong representative for samples, prices, and full information on these clean-running, long-lasting cork cots. Or write today to Armstrong Cork Company, Textile Products Department, 8310 Arch Street, Lancaster, Penna.

EXCLUSIVE EXTRUSION PROCESS PRODUCES SEAMLESS CORK COTS



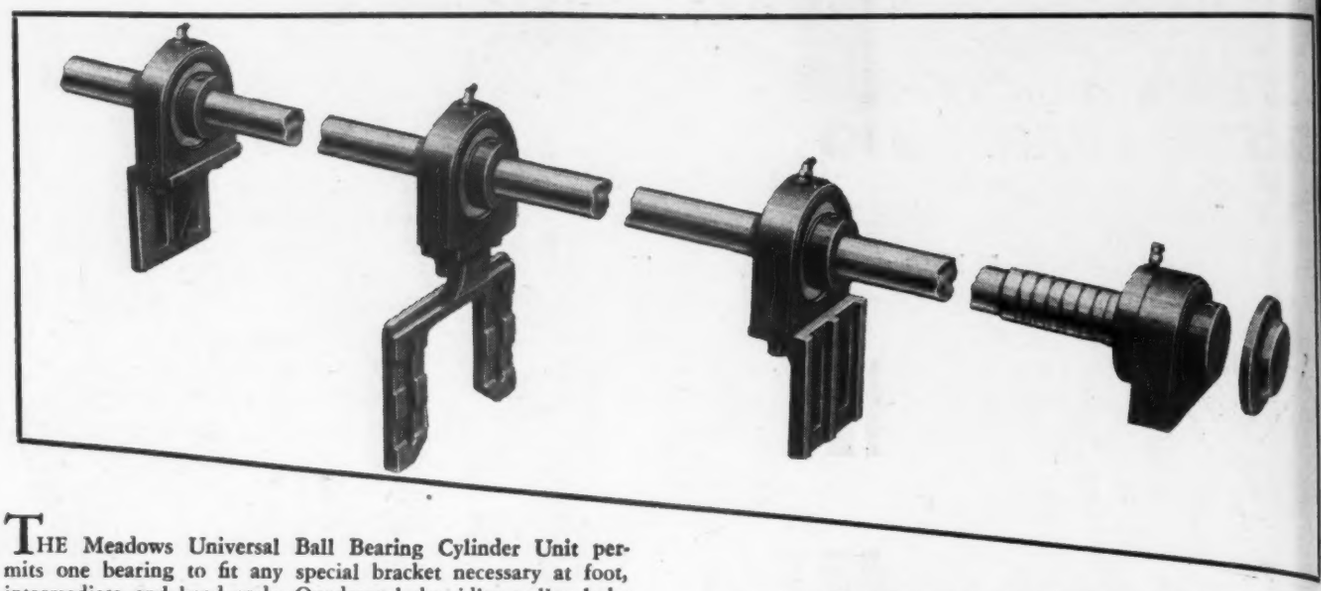
Armstrong's Cork Cots have no structural weakness to cause premature breakdown. Each cot is uniform in density from inside to outside, from end to end. As a result, each compresses evenly, spins stronger yarn, lasts longer.

BETTER RUNNING WORK — MORE POUNDAGE

ARMSTRONG'S CORK COTS

ACCOTEX COTS • ACCOTEX APRONS

MEADOWS HEAVY DUTY *Universal* BALL-BEARING CYLINDER UNITS



THE Meadows Universal Ball Bearing Cylinder Unit permits one bearing to fit any special bracket necessary at foot, intermediate and head ends. Quadrant hubs, idler pulley hubs and outboard caps can be used as needed.

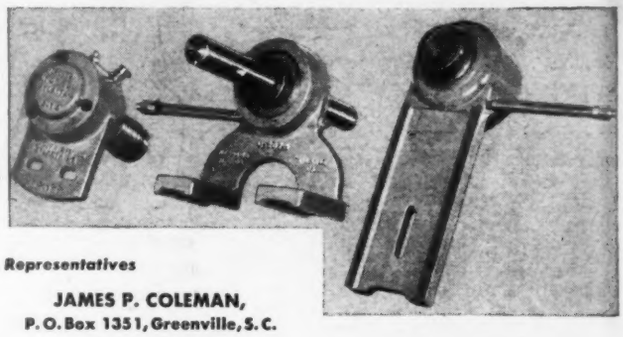
We particularly recommend these Universal Bearings when new oversize journals are installed. At this time all bearings can be standardized to one size for long, trouble-free operation and stock-room simplicity.

- **Fafnir Heavy-duty, self-aligning ball bearings.**
- **Double metal shields on both sides.**
- **Completely interchangeable in various shaft sizes on supporting brackets.**
- **Requires lubrication only once every 5000 hours, or roughly twice a year.**
- **No felt seals for troublesome installations and high initial friction drag.**
- **Brackets for bearings furnished to your requirements.**

We have ample stocks of these bearings and most housings for prompt shipment. *Repair and maintenance item.*

We also have in stock ample supplies of SAE 1035 ground and polished +.000 - .001 shafting for journals. We strongly recommend installing these high strength, precision journals when applying ball bearings.

Also standard Fafnir design Ball Bearing Cylinder Units to replace plain bearing units in Whitin, Saco-Lowell, Saco-Pettee, H & B, Lowell & Mason, and Hall-Stell or Prince Smith frames.



Representatives

JAMES P. COLEMAN,
P. O. Box 1351, Greenville, S. C.

WALTER S. COLEMAN,
P. O. Box 722, Salisbury, N. C.

MATTHEWS EQUIPMENT CO.,
93-A Broadway, Providence, R. I.

MEADOWS MANUFACTURING CO. · ATLANTA, GA.

. . . . Ball-Bearing Specialists to the Textile Industry . . . .

Running to Ruin

...SO THAT YOU WILL GET LONGER LIFE FROM EVERY TEXROPE V-BELT

THIS MACHINE tests TEXROPE Super-7 V-Belts — runs them at varying speed and load until they give out. A trained operator records results: How long did they last? What broke down first: Cords? Cover? Rubber compound? Does destructive heat develop?

Out of tests like this have come stronger cords—tougher, more wear-resistant covers — resilient, cooler-running rubber — vital improvements in design and construction. TEXROPE Super-7 V-Belts are today the BEST in 20 years of V-Belt experience.

A-C FOR COMPLETE V-BELT SERVICE

Call your nearest Allis-Chalmers office or dealer for ALL your V-Belt drive needs — TEXROPE Super-7 V-belts all types, all sizes; TEXSTEEL, TEXDRIVE and "Magic-Grip" Sheaves; VARI-PITCH Sheaves and SPEED CHANGERS. They're all engineered and backed by the originators of the Multiple V-Belt Drive for industry. ALLIS-CHALMERS, MILWAUKEE 1, WIS.

A 2099

PICK YOUR SUPER-7 V-BELT

Heat-Resisting Super-7
Stands temperatures up to 180°. The TEXROPE V-Belt for most drives.

Oil-Resisting Super-7
Neoprene cover protects core against moderately oily or greasy conditions.

Oil-Proof Super-7
Made of Neoprene throughout. Use it when the belt must swim in oil.

Static-Resisting Super-7
Recommended where explosion hazard exists. Static-conducting element throughout cover won't wear off.

TEXROPE Super-7 V-Belts result from the co-operative research of two great companies—Allis-Chalmers and B. F. Goodrich—and are sold exclusively by A-C.

ALLIS-CHALMERS

One of the Big 3 in Electric Power Equipment — Biggest of All in Range of Industrial Products

TEXROPE V-BELT DRIVES

New F.N.F. Tricot Knitting Machine

NOW

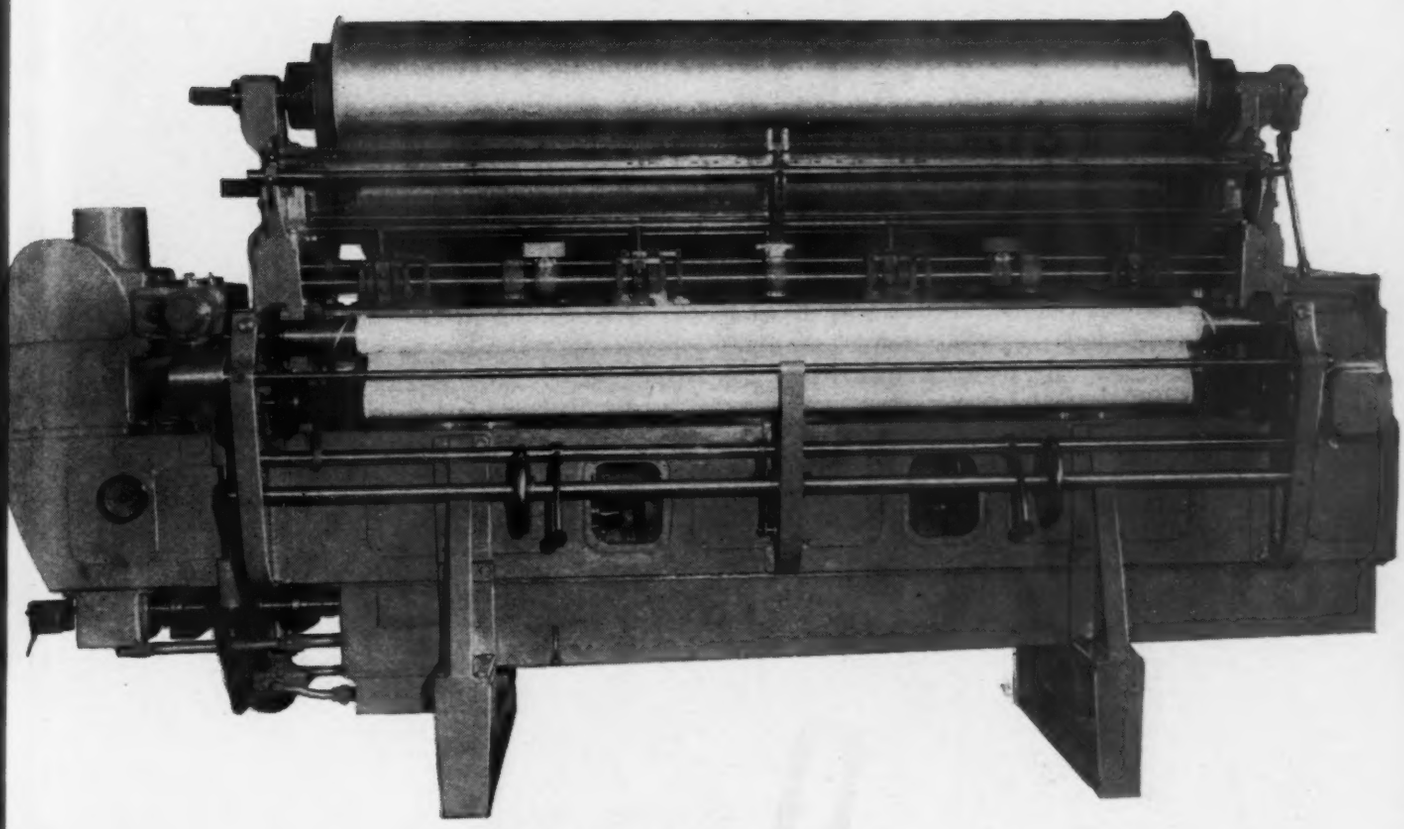
Newly designed from beam to box bed, the F.N.F. high-speed warp knitting machine just announced to the textile trade brings unprecedented efficiency, economy and quality to the production of knitted fabrics.

Quiet, vibrationless, self-lubricating, and with automatic synchronization of the beam speed and yarn feed-rate to the needles, the machine easily knits at 1000 courses a minute—yet stops immediately if a single thread breaks. It knits plain or novelty fabrics of wide pattern range. The patterns can be changed in twenty minutes.

Among its outstanding features is F.N.F.'s durable new beardless and latchless tubular compound needle which is smoothly actuated by silent, double eccentrics. The hook closing member requires no adjustment.

The machine, which knits an 84-inch fabric, can be shipped fully assembled and ready for operation.

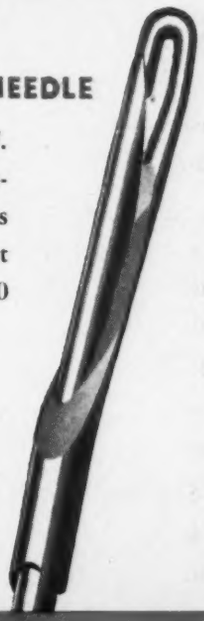
Sole Manufacturers: F.N.F., LTD., Burton-on-Trent, Staffordshire, England



WON DISPLAY

NEW TUBULAR COMPOUND NEEDLE

Much of the speed and quietness of the F.N.F. machine stems from this durable new tubular compound needle. The latchless, beardless hook, when closed, is smaller than usual, yet it will accommodate an aggregate of 300 denier or equivalent count.



SEE IT OCTOBER 10 TO NOVEMBER 22

American Viscose Corporation, sole U.S. Sales Agents for the new F.N.F. machine, cordially invites you to see the machine in operation and to inspect some of the fabrics it produces, at its Marcus Hook, Pa., plant between October 10 and November 22. To give visitors the fullest possible attention of our technical staff, it is necessary to arrange appointments in advance. Please write, suggesting a convenient date, directly to American Viscose Corporation, F.N.F. Sales Agents, 350 Fifth Avenue, New York 1, New York.

SOLE U. S. SALES AGENTS:

AMERICAN VISCOSE CORPORATION

America's largest producer of rayon

350 Fifth Avenue, New York 1, New York, U.S.A.

New Light Weight FORMICA Hosiery Carrier!

THE smooth tight surface of the Formica laminated plastic hosiery carrier provides no rough spots on which fine threads can be snagged and will prevent many accidents that might otherwise create "seconds". The surface is very easily cleaned. Dust is easily wiped off the hard smooth surface.

The Formica hosiery carrier weighs only 6½ pounds yet the studded ribbing of the sides and bottom gives it great rigidity. These ribs also act as bumpers protecting the smoothness of the edges when the carriers are stacked.

Handles are designed so that they fall outward and do not interfere with loading. There is a center "bridge" provided to prevent hosiery from sliding out if the carrier should become off balance during transportation. A coupon operations card carrier is provided.

At present available in only one size: 36 inches long, 4½ wide and 15 inches deep.

This carrier has stood rigorous tests such as being thrown ten feet in the air to land on a steel edged concrete stairway, bouncing down ten steps. Repeated treatment of this kind has not rendered the carrier unusable.

Write for further information.

FORMICA
TRADE MARK REG. U.S. PAT. OFF.

The Formica Insulation Co., 4668 Spring Grove Ave., Cincinnati 32, O.

WATER REPELLENCE

PARAMUL 115

PARAMUL 115 is an aqueous emulsion of wax and aluminum salts that is now widely used by textile manufacturers to impart water repellency and stain resistance to fabrics. It is equally suitable for treating cotton, rayon, linen and wool fabrics for outer wear as well as equipment purposes. The resultant finish is odorless and harmless to skin or fabric.

Easy and economical to use, PARAMUL 115 is stable over a wide range of temperatures from freezing to tropical conditions. It is safely stored without breaking down over long periods of time.

Investigate PARAMUL 115 today and find out how this war-proved water repellent can serve your merchandise and customers. Our technical staff and research laboratories are at your disposal to help you achieve the best results in imparting water repellency and stain resistance to your fabrics.

CYANAMID

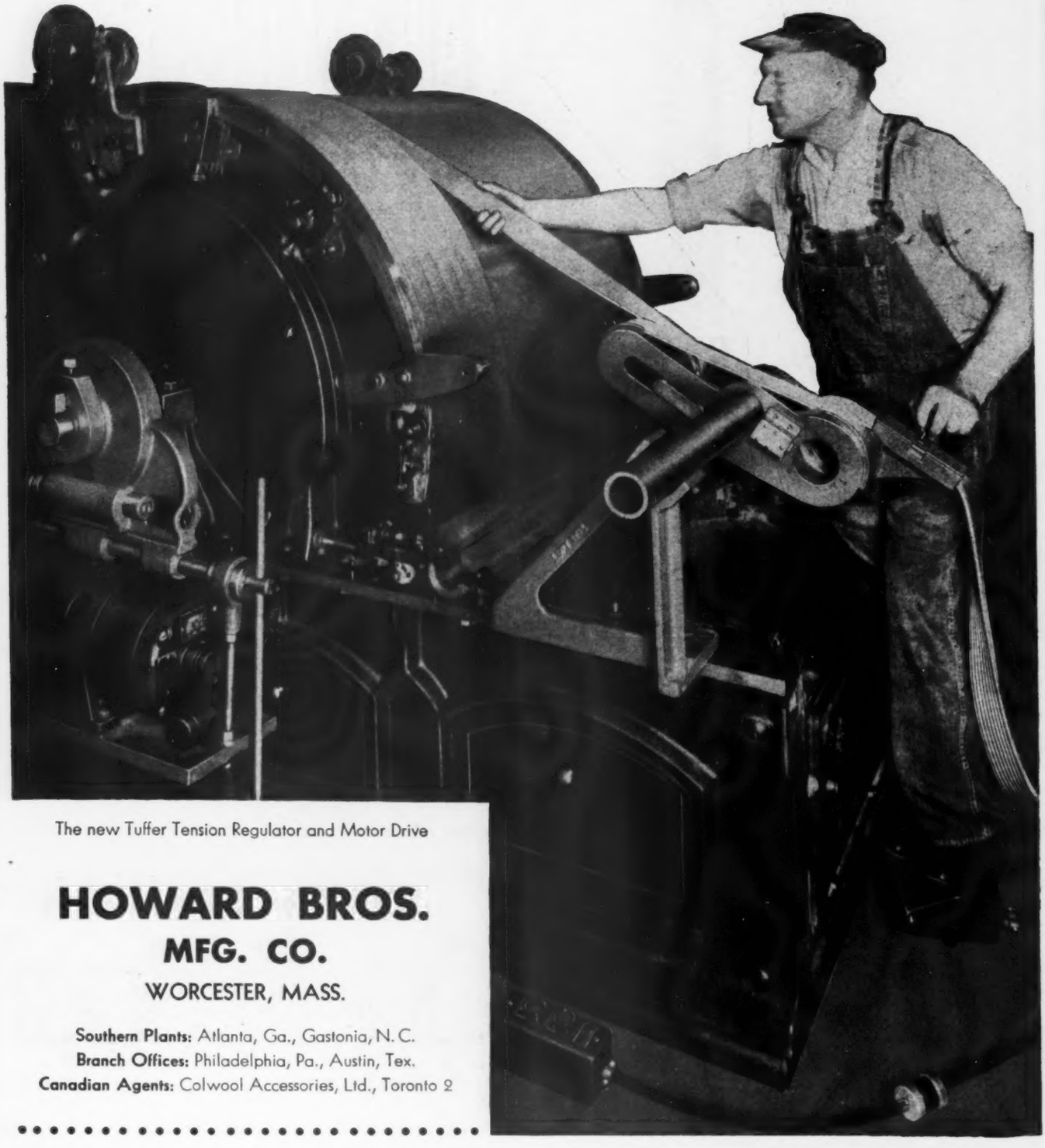
What Investment Promises More?

The uniformity and strength of yarns — to a large extent — determine operating efficiencies in the spinning and weaving rooms.

Proper carding is the *first step* toward strong, even yarns. Expertly applied and operated, Tufferized Card Clothing should materially improve the quality of your carding and increase the yield. It is guaranteed uniform because it is made by our exclusive patented precision process.

Where else would this relatively small investment have such a widespread, beneficial effect?

Use TUFFERIZED Card Clothing



The new Tuffer Tension Regulator and Motor Drive

HOWARD BROS.
MFG. CO.
WORCESTER, MASS.

Southern Plants: Atlanta, Ga., Gastonia, N. C.
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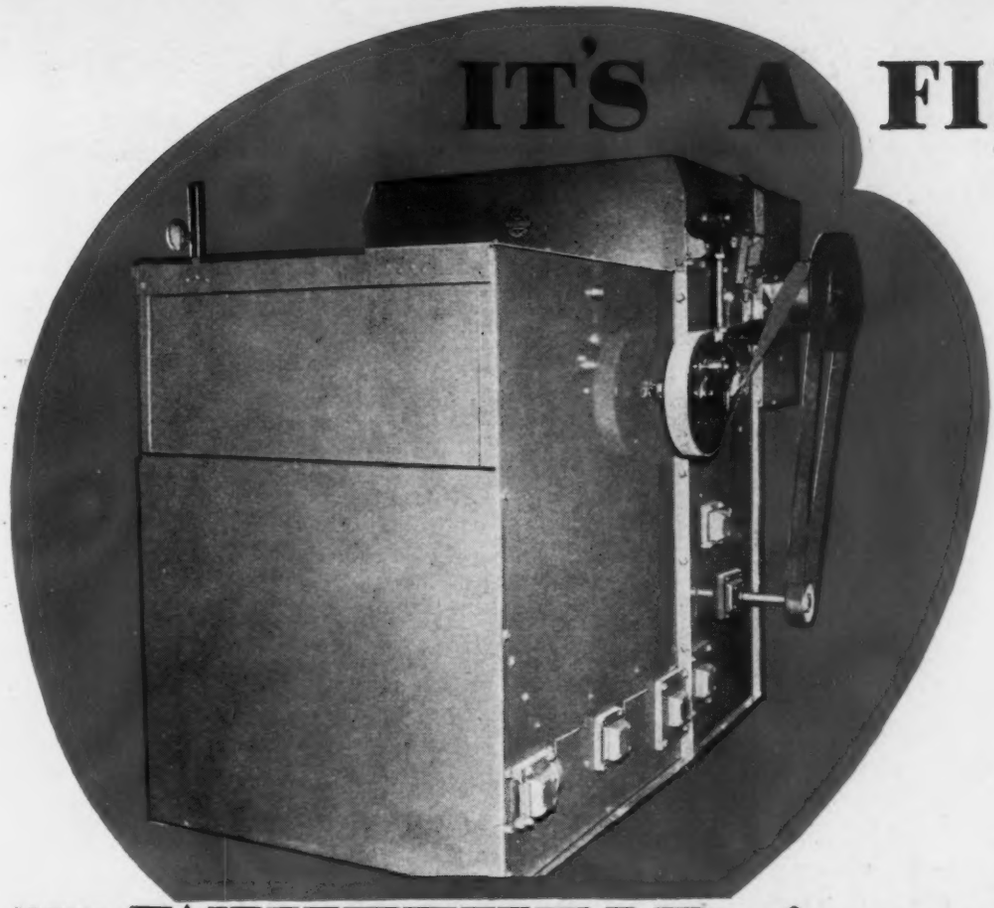
IT'S A FIRST!



NEW WHITEHEAD #1 BLENDING FEEDER

The WHITEHEAD No. 1 BLENDING FEEDER is the only machine of its kind built in three separate sections and completely enclosed. Twenty-eight internal working parts have been eliminated. This reduction in weight effects a considerable saving in power required to start and operate the machine, when operated singly or in a blending line. Many exclusive new features have been added and others improved for greater efficiency, ease of operation and maintenance.

Combing attachment is standard equipment . . solid composition belts replace leather belts . . apron is solid and made of corrugated fire-proof composition . . light metal rolls replace internal cast iron pulleys . . self-aligning "Oilite" bronze bearings throughout greatly reduce friction and eliminate the possibility of grease stains on fibers. A mechanical signal indicator allows operator to immediately determine amount of stock in machine at any time.

The Whitehead No. 1 Blending Feeder is the smallest, sturdiest, most efficient and economical machine ever devised for use in the "Cotton System" in cotton, wool or synthetic mills. Advanced in design and construction, it requires less space, less operating power and notably less maintenance. All parts and sections are precision manufactured and easily interchangeable from standard stock.

Write today for illustrated folder giving complete data on this revolutionary new machine, now ready for

IMMEDIATE DELIVERY

TROY

WHITEHEAD

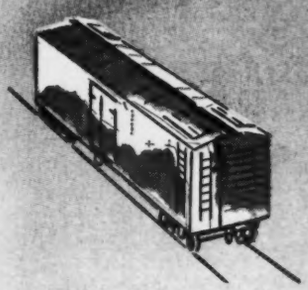
MACHINERY CO., INC.

CHARLOTTE NORTH CAROLINA

This test tube
filled a thousand tank cars
CENTRAL
21013
Flintkote

Sired by research, conceived in a laboratory, born in a test tube . . . and shipped by the carload.

That's a thumbnail biography of many Flintkote Industrial Products widely used in maintenance, in new construction, and in processing.

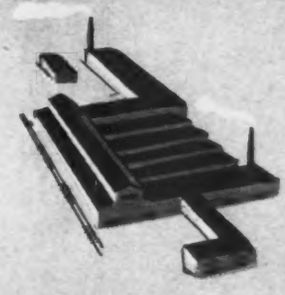


Flintkote Hydralt* Protective Coatings are asphalt in its most modern form . . . stable, durable, mineral-colloid emulsions used on steel freight cars and ships . . . to prevent damage from weather and corrosion.

To meet standard and special requirements of saturation, bonding, coating, etc., the broad line of FlintkoteSyntex* Products includes aqueous dispersions of rubbers and resins. For example: Tire Cord Solution for rayon and cotton tire cord . . . Rug and Carpet Backings . . . Textile Laminants and Coatings.

Flintkote Sound Damping Materials are but one of many types of Flintkote-developed materials . . . all helping manufacturers make better products.

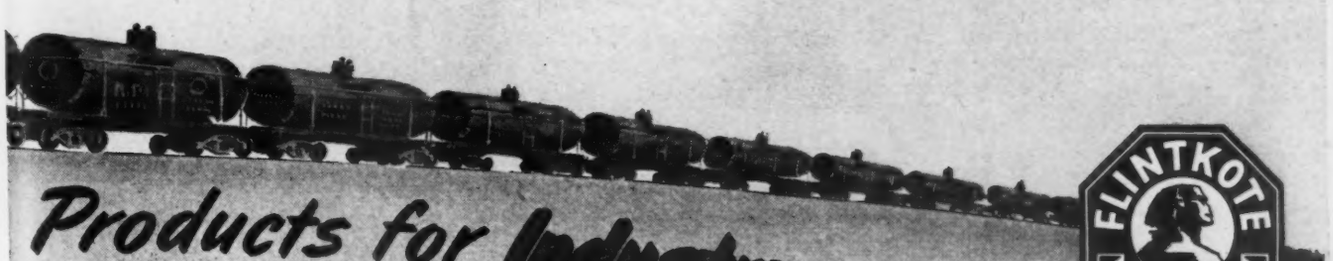
For buildings, inside and out, Flintkote Hydralt Protective Coatings shield metal and concrete surfaces against rust and weather. Mastic Floors made with Flintkote Flooring Emulsions are cold-laid, easy to apply, economical to maintain.



What do you make . . . boxes or busses? Carpets or coatings? Whatever it is, no doubt a Flintkote Product can help you.

Write us. Our entire research, development and manufacturing facilities are at your disposal.

*TM Reg. U. S. Pat Off.



Products for Industry

FLINTKOTE INDUSTRIAL PRODUCTS

THE FLINTKOTE COMPANY • INDUSTRIAL PRODUCTS DIVISION • 30 ROCKEFELLER PLAZA, NEW YORK 20, N. Y.

Atlanta • Boston • Chicago Heights • Detroit • Houston • Los Angeles • New Orleans • Washington • Toronto • Montreal

For new production goals-

the productive flames of GAS

Are you taking advantage of every trick-of-the-trade to produce at peak efficiency?

The pressing demand for more and more goods is the challenge to you to adapt production-line tools like GAS and modern Gas Equipment for Textile Processing.

If you manufacture the loveliest cloth in America, or if your specialty is the lowliest fabric for every-day purposes, you need heat. If your plants produce materials of natural or synthetic fibers, you need heat.

Where you need heat for textile processes you need GAS. When compared with all other industrial heating mediums there's no fuel like GAS. For drying, singeing, warp sizing, calendering, and for many other textile operations GAS is the ideal fuel.

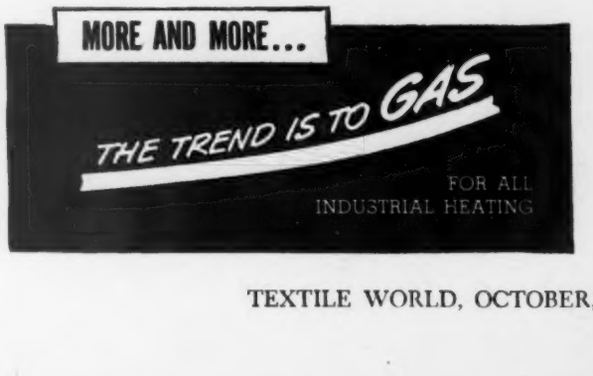
Inherent features of GAS include: flexibility—dependability—speed—controllability—uniformity—economy.

Engineers at your local Gas Company keep in close touch with all developments in the application of GAS and modern Gas Equipment for textile processes.

You will find the suggestions of these Gas Company Engineers of real value.

AMERICAN GAS ASSOCIATION

420 LEXINGTON AVENUE, NEW YORK 17, N.Y.



An incredibly intricate print . . . the stark simplicity of solid black . . . a challenge to the skills of the dyer, the printer and the finisher.
National Application Laboratories each year solve thousands of equally unusual coloring problems, adding constantly to the 67-year backlog of unduplicated experience available through National Technical Service.
We invite your continued use of this constructive, confidential help.
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WHEREVER COLOR IS USED
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For Manufacturers and Merchants

Inquiries as to our services solicited

●

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Your next move to capture new markets

There are big, new volume markets waiting for the forward-looking weaver and converter with Firestone's amazing new textile material —*Velon*.

For seat upholstery—home, commercial, transportation—for hats, bags, shoes, belts, drapes, lampshades, awnings, outdoor furniture, *Velon* brings brighter, lighter, smarter color, where color was never before practical.

***Velon* is impervious to dirt.** Grease, grime and most stains can't cling to its non-porous threads. A whisk of a damp cloth restores *Velon's* original bright beauty.

***Velon* is impervious to wear.** Each filament is a single thread of giant strength, amazingly resistant to snagging, scuffing, abrasion.

***Velon* is impervious to elements.** Can't fade, run, wash out because the color is inherent in the structure of the monofilament. Shrugs off water like a duck.

***Velon* is easy to weave.** Eliminates production steps, readily adapts to your manufacturing methods, requiring no major changes. Firestone engineers will gladly consult with yours to help you produce an unlimited variety of patterns, weaves and texture to capture many markets.

FREE! Write Firestone, Akron, for your copy of the full-color *Velon* Booklet, and samples of yarn. *Trade Mark

BEST TODAY · · STILL BETTER TOMORROW

LISTEN TO THE VOICE OF FIRESTONE MONDAY EVENINGS OVER NBC

STEEL HEDDLES
HEDDLE FRAMES
COTTON HARNESS
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EMMONS LOOM HARNESS STRAPPING
Mfgd. by B. F. Goodrich Co.

A 10 IN 1 SERVICE THAT SAVES YOUR TIME AND ENERGY

When the E-Man calls, or when you call him, you can order as many as 10 DIFFERENT PRODUCTS from this one source — all second to none in quality. Think of the convenience and of the time and energy you save. This is a bonus in addition to the performance economy that Emmons Products assure.

Emmons Service is efficient in another way, too, in that there's an E-Man in your vicinity, no matter in which textile area you are located. His address and 'phone number are given here for your convenience. Get in touch with him the next time you need the products he offers.

EMMONS LOOM HARNESS CO., Factories in Lawrence, Mass., and Charlotte, N. C. Branch offices as listed.

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'Phone—6194

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George Field
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'Phone—3-7503

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'Phone—Lexington 2-6060

ATLANTA
Arthur Harris
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'Phone—Main 2643

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'Phone—Harrison 7140

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R. D. Hughes Sales Co.
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'Phone—C-6283; C-6284

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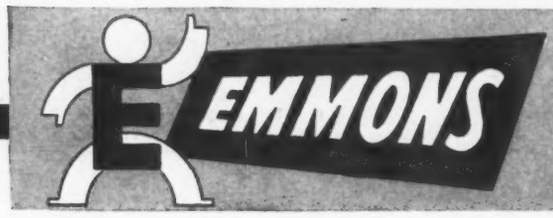
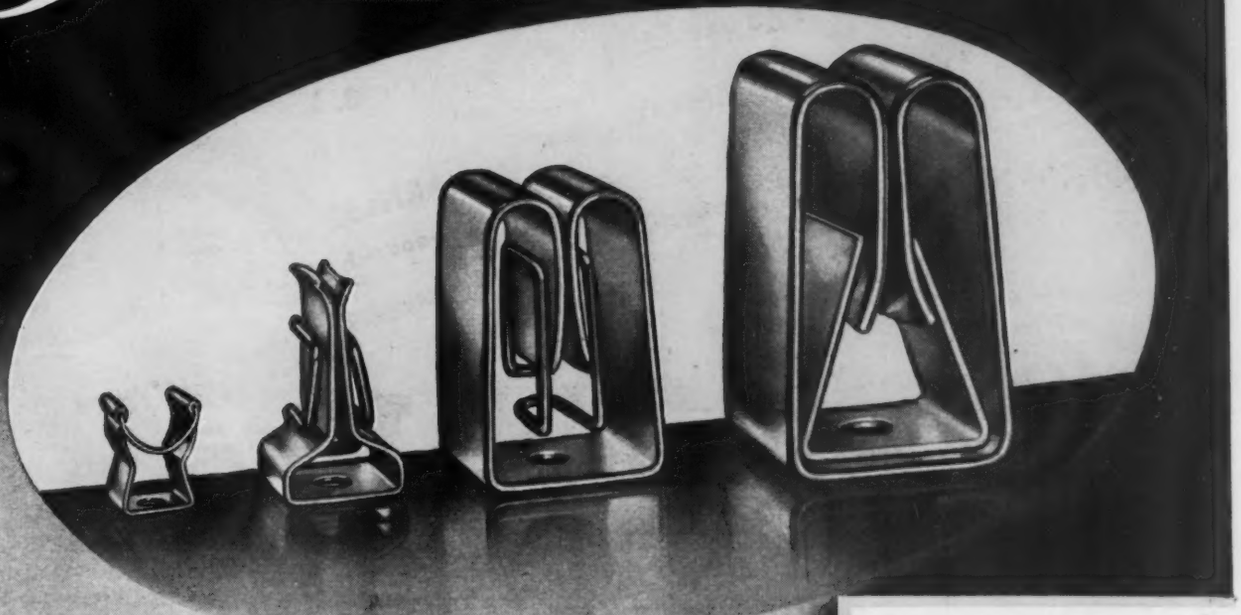


WEAVE ROOM ACCESSORIES

Positive Pressure FUSE CLIPS

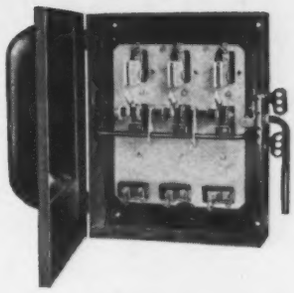


. . . an exclusive feature of all Square D Safety Switches

What do these fuse clips add to overall safety switch performance? Plenty!

- They reduce heating at contact points by 60%, compared with conventional type clips.
- Copper instead of bronze, they afford substantially more conductivity.
- Lower contact resistance because of higher contact pressure.
- Design permits easy insertion and removal of fuses, notwithstanding the higher contact pressure.
- The Positive Pressure is automatic. It requires no bolts or clamps. It is immune to the loosening effect of vibration, wear or thread stripping.

This is one of many basic features which have placed Square D safety switches in the number one preference spot.



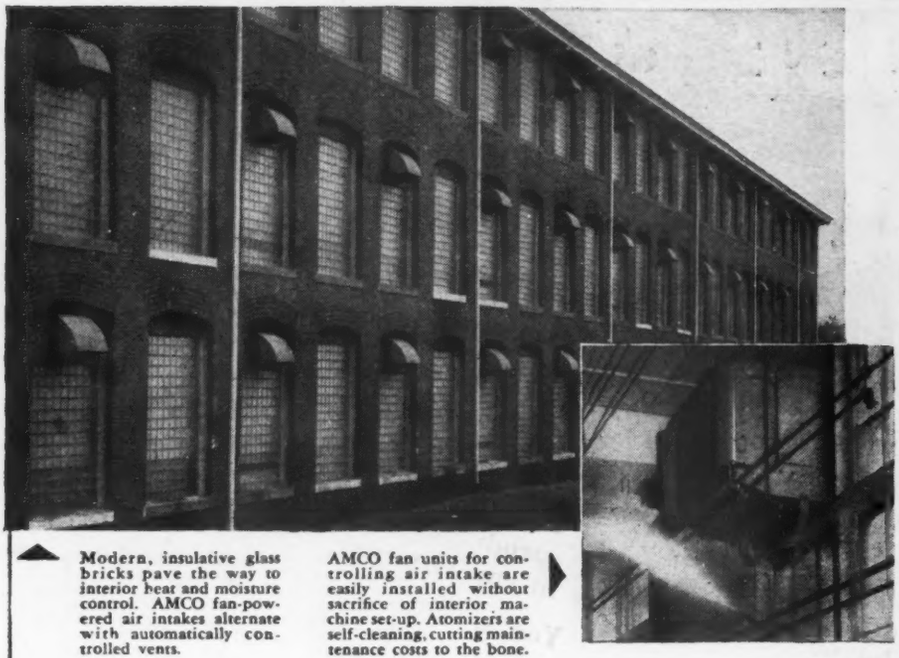
Write for BULLETIN 500 which describes Square D's complete safety switch line and all its features. Address Square D Company, 6060 Rivard Street, Detroit 11, Michigan.

SQUARE D COMPANY

DETROIT • MILWAUKEE • LOS ANGELES

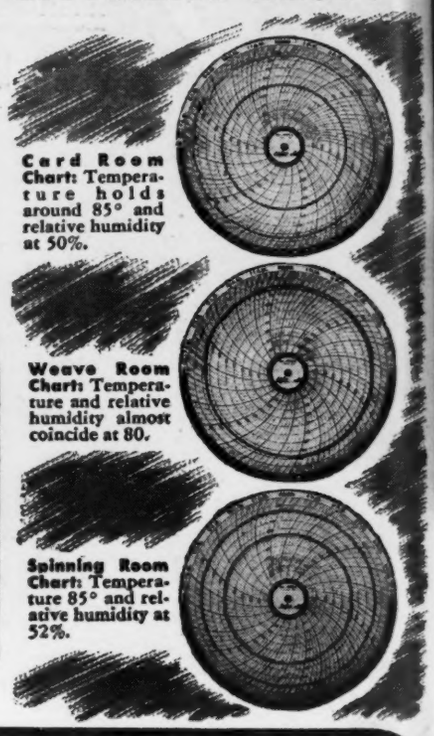
Here's Amco Humidification and Cooling

AT ITS SIMPLE AND EFFICIENT BEST!



Modern, insulative glass bricks pave the way to interior heat and moisture control. AMCO fan-powered air intakes alternate with automatically controlled vents.

AMCO fan units for controlling air intake are easily installed without sacrifice of interior machine set-up. Atomizers are self-cleaning, cutting maintenance costs to the bone.



Card Room Chart: Temperature holds around 85° and relative humidity at 50%.

Weave Room Chart: Temperature and relative humidity almost coincide at 80.

Spinning Room Chart: Temperature 85° and relative humidity at 52%.

KNOWING that the reduction of excessive temperature and the holding of humidity at correct levels are essential to efficient production and worker health and comfort, Marion Manufacturing Company took action – had an AMCO Evaporative Cooling System installed – and got accountable results. The three charts from separate plant departments provide a graphic record of the ideal conditions maintained by the AMCO system.

No rambling duct lines are necessary with AMCO. Relative humidity is precisely maintained by introducing atomized water spray, and the frictional heat of high speed machines is absorbed by evaporation of the moisture in conjunction with carefully controlled air-flow.

An AMCO engineer will be glad to show you how, with this system, you can modernize your plant simply and economically to get greater speed and output that pays profits in these competitive times.

FEATURES OF AMCO HUMIDIFICATION AND COOLING

- Reduces excessive temperature and holds relative humidity at point best suited to fibre and process.
- Speeds production in high friction (heat) areas.
- Assures evener yarn counts and increases breaking strength.
- Gradually increases regain for good roving and consequent better spinning.
- Drafting of fibres smoother and more compact.
- Waste and fly greatly reduced.
- No cumbersome ducts to require cleaning and obstruct light.
- Easier to install – minimum disruption.
- High flexibility to meet changing room conditions.
- Minimum maintenance.
- Amco Evaporative Cooling utilizes your present humidification system.
- Increases worker comfort.

AMCO

HUMIDIFICATION and COOLING

AMERICAN MOISTENING CO. AFFILIATED WITH GRINNELL COMPANY, INC., PROVIDENCE, R. I. • BOSTON • ATLANTA • CHARLOTTE

ACK ON THE JOB!

It's good to be through with war production and to have plant re-conversion nd us. It's satisfying to be manufacturing once again for our regular trade in the Textile d.

've new ideas about machine design—many already are incorporated in our equipment. For stance: the tensionless jig, the tuber and others now in production. And we've an entirely ew heavy-duty tentor for those who want the last word in capacity and modern construction. Of course, it will take some time to catch up on orders. You will do us a favor by anticipating our needs well ahead.

VAN VLAANDEREN MACHINE COMPANY

370 Straight Street, Paterson, 3, New Jersey **Cable address, VLAANDEREN, PATERSON, N. J., U. S. A.**

World's largest manufacturer of machinery for processing modern fabrics

Which of these Packages, in your opinion, will Roll Faster to your customer?

FROM ACTUAL PHOTOGRAPHS, AT A DISTANCE OF 3 FEET

These are three commonly used methods of marking packages—stenciling, labeling and hand-marking —common carriers, such as the railroads, truckers and Railway Express, recommend stenciling.

Why take a chance—rain and damp weather obliterate type or hand written labels—avoid hand addressed mistakes—illegibility—labels coming off—lost shipments—delayed shipments.

Stencil address your shipments to keep your packages out of the carriers' Lost Shipment Warehouse.

Stenciled Shipments Roll Faster

THE WORLD'S OLDEST AND LARGEST MANUFACTURER OF STENCIL CUTTING MACHINES

D.B. REG U S PAT OFF

DIAGRAPH-BRADLEY
STENCIL MACHINE CORPORATION
ST. LOUIS 8, MISSOURI

DISTRIBUTORS IN PRINCIPAL CITIES—SEE CLASSIFIED SECTION—TELEPHONE DIRECTORY—STENCIL CUTTING MACHINES

OVER 100 D-B ITEMS FOR THE SHIPPING ROOM

AHCO 1219

An Ethyl Cellulose emulsion . . . 19% solids . . . starch extender . . . finishing agent which gives considerable body, but without stiffness, and a full leathery hand as a self-finish or in conjunction with starches or gums.

AHCO 1225

An Acrylic Resin emulsion . . . 25% solids . . . starch extender . . . finishing agent similar to AHCO 1219 but more body pound for pound, and greater wash resistance . . . no loss in AATCC No. 3 test . . . combines with AHCO 1219 for economy.

AHCO *Resin Finishes*

CELLULOSE AND RESIN EMULSIONS —STARCH EXTENDERS AND BINDERS

A — All of these products can be dried at normal operating temperatures.

H — All of these products can be run in cold water solutions.

C — When used in mixtures where heat is applied, add these resins first.

O — All these products are compatible with our Ahcovels* E, F & R.

AHCO 1243

An Alkyd Resin emulsion . . . 20% solids . . . starch extender . . . excellent binder . . . water and wash resistant in finishes . . . imparts greater abrasion resistance and tensile strength to finishes . . . recommended in pure finishes where starch saving is important.

AHCO 1250

A Vinylite Resin emulsion . . . 50% solids . . . starch extender . . . pound for pound gives greatest stiffness of products described here . . . recommended as finishing agent for cotton, nylon, and rayon . . . high solids content makes this product economical to use . . . excellent binder and good wash resistance qualities.

*Trademark Reg. Patented

ARNOLD HOFFMAN & CO., INC.

MANUFACTURING CHEMISTS

ESTABLISHED 1815 • PLANTS AT DIGHTON, MASS. & CHARLOTTE, N. C.

PROVIDENCE, RHODE ISLAND

NEW YORK • BOSTON • PHILADELPHIA • CHARLOTTE

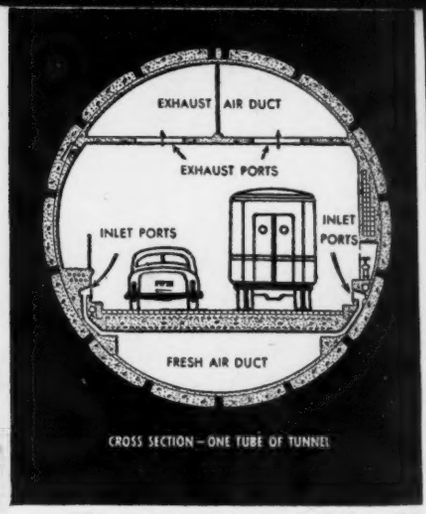
LONGEST VEHICULAR TUNNEL IN

1. HERE'S THE SITE of the Brooklyn-Battery Tunnel—from Manhattan, to Governors Island, to Brooklyn. More than a mile and a half long, it will require equipment capable of moving 24,000 tons of air per hour. For a project of this magnitude, it's only natural that Sturtevant should supply the ventilating fans. The name "Sturtevant" has been associated with tunnel ventilation from the very beginning. For example:

11 OF THE 14 MAJOR VEHICULAR TUNNELS IN THE ARE VENTILATED WITH STURTEVANT

2. THE HOLLAND TUNNEL—first project of its kind, and at that time one of the great engineering wonders of the world—is completely ventilated by Sturtevant. Completed in 1927, this 8,368-foot tunnel was equipped with a total of 92 Silentvane Fans. Since then, much experience has been gained in the efficient ventilation of under-water tunnels of this type.

3. IN THE QUEENS-MIDTOWN TUNNEL, completed in 1940, it was found that ample ventilation could be supplied by a total of 46 fans—23 blowers and 23 exhausters. This 6,343-foot tunnel under the East River, is also completely Sturtevant-ventilated. The Holland, Lincoln, Queens-Midtown and Brooklyn-Battery Tunnels all utilize the "distributive" method of ventilation. Here's how it works:



4. The spaces above and below the tunnel roadway serve as air ducts. Fresh air, supplied by blower fans, is discharged from the duct below the roadway, through openings distributed along its entire length. Air and fumes rise to the ceiling, are drawn out by exhaust fans, through the return duct above the road. The system must be *completely dependable*, year in and year out. That's why—

HEATING • VENTILATING • AIR CONDITIONING •

DRYING • DUST AND FUME CONTROL • CONVEYIN

THE U. S... COMPLETELY VENTILATED by STURTEVANT

53 Silentvane Fans just ordered for new Brooklyn-Battery Tunnel in New York City

SUPPLYING FRESH AIR for a vehicular tunnel—a restricted space far underground, filled with cars giving off toxic gases—is a project that almost staggers the imagination. The new Brooklyn-Battery Tunnel, for example—1.73 miles in overall length—will require a ventilating system capable of handling more than ten million cubic feet of supply and exhaust air per minute! 24,000 *tons* per hour! Yet, with 53 efficient, smoothly-running Sturtevant Silentvane fans providing the ventilation, the air *inside* the tunnel will actually be purer* than the air in a downtown Manhattan street.

We're proud of the fact that Sturtevant fans are to be used for this job — as they are in 11 of the 14 major vehicular tunnels in the United States.

HERE'S WHAT THIS MEANS TO YOU:

You're probably not building any tunnels this year—but chances are, you do have a problem that calls for good ventilation. Whether it's a small job requiring a single blower, or a large project that will need a central air-moving system—the same engineering skill and product quality back of this tunnel job, are at your disposal. Remember too, that as a Division of Westinghouse Electric, Sturtevant is the *only* manufacturing source that offers you the three basic types of equipment—for air moving, air conditioning and air-cleaning. Whatever your needs, Sturtevant is ready to serve you. B. F. STURTEVANT COMPANY, *Division of Westinghouse Electric*, Hyde Park, Boston 36, Mass.

UNITED STATES FANS

5. Silentvane Fans, like the one being tested above, were selected for the Pennsylvania Turnpike's five tunnels, also for the Detroit-Windsor and Oakland-Alameda tunnels. Wherever air-at-work is being used today—you'll find fans by Sturtevant giving outstanding service.

**Average carbon monoxide content, for example, will be only about .04%, while street air may contain as much as 0.11% of this gas.*

3682-50

Sturtevant
Puts Air to Work

B. F. STURTEVANT COMPANY • DIVISION OF
Westinghouse ELECTRIC

PRECIPITRON

MECHANICAL DRAFT

PERKINS AUTOMATIC BIN PILERS

PATENTED

You cannot afford to pile by hand

B. F. PERKINS & SON, INC.

ENGINEERS AND MANUFACTURERS

HOLYOKE • • • MASSACHUSETTS

Tough Going! But Dayton DeLuxe Loop Pickers are Engineered to do this job twice as Long as other Pickers!

It's a terrific impact . . . the impact of picker against shuttle . . . a blow that is repeated as many as 85 times a minute. Such impacts of the highest speed looms, however, are easily taken in stride by Dayton De Luxe Loop Pickers.

Reason for their exceptional stamina is their special construction. The face-block has precisely the proper cushion, resilience, and durability; is anchored in, and vulcanized to stay. It can't buckle or distort. And the face is flared, and shaped to guide the shuttle into the body of the picker.

The loop holds, too. Its tapered hole with rounded corners fits tightly, and has no expansion; so Dayton's don't "work up". They maintain throughout many months of service, the correct position for perfect shuttle throw.

Hundreds of users have found that they can save up to 50% on picker costs by adopting Dayton De Luxe Loop Pickers. You, too, can benefit by using Daytons. Write today for all the facts on this specially engineered picker.

THE DAYTON RUBBER MANUFACTURING COMPANY

Factory—Waynesville, N. C.

MAIN OFFICE: WOODSIDE BLDG., GREENVILLE, S. C.

IMPORTANT REASONS WHY YOU SHOULD STANDARDIZE WITH DAYTON DELUXE LOOP PICKERS

1. Greater strength for double life.
2. Resilient construction for proper cushion.
3. Flared bottom for protection when applied.
4. Rounded front corners to reduce roughness.
5. Perfect fit for easy application.
6. Precision mold to retain shape and fit stick.

Dayton Rubber

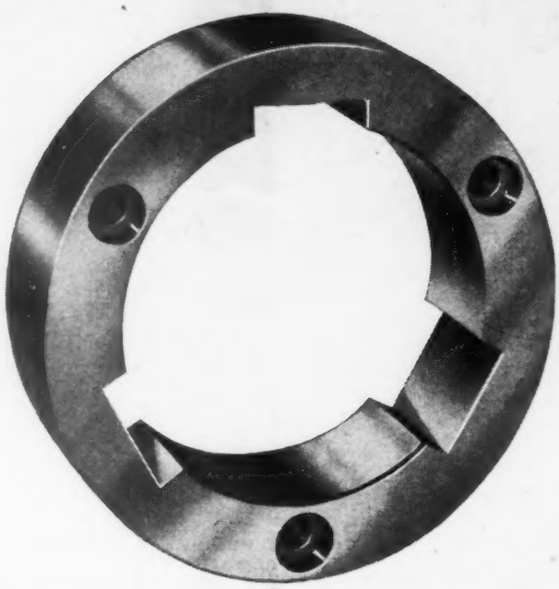
FAMOUS DAYCO SYNTHETIC RUBBER PRODUCTS SINCE 1934

MAXITORQ FLOATING DISC MAXITORQ FLOATING DISC

NEW *Convenience . . . Economy*

with MAXITORQ RING TYPE DRIVING CUPS

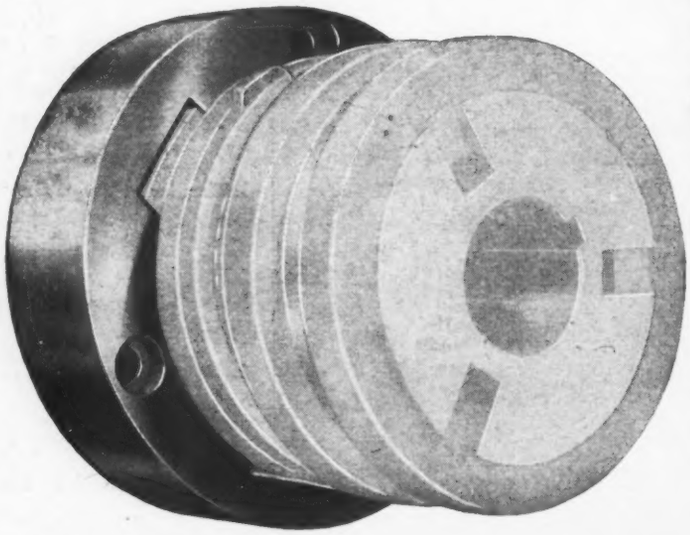
Maxitorq Ring Type Driving Cups have been designed to provide an economical means of adapting Maxitorq Floating Disc Clutches to various types of driven or driving members. They are made to standard specified limits in order to permit piloting the inside or outside diameter with pulley, fly wheel, sprocket, gear, sheave, etc. Bolt holes are counter bored to receive socket head cap screws for ease of tight, secure fastening.



NO NEED TO CHANGE BEARING DESIGN

In addition to the economy feature of Maxitorq Ring Type Cups, is the definite advantage of installation without change of present bearing design.

Moreover, users of Maxitorq Clutches have a decided price advantage in adapting Ring Type Driving Cups to their specific installations.



RING CUP USED WITH MAXITORQ CLUTCH

It is far better for machinery manufacturers to use Maxitorq Ring Type Driving Cups than to make their own. We are equipped with the precise tools and broaching fixtures to insure close tolerances, and accurate alignment of lug slots. Our experience in correct hardening prevents warping of the cup, which sometimes might occur.

Construction is such that there are no apertures . . . the solid enclosure helps to prevent the entry of dust, dirt or any harmful material into the mechanism . . . and presents a neat, compact appearance.

SEND FOR SPECIFICATION BULLETIN NO. 46-10

TRADE MAXITORQ MARK

THE CARLYLE JOHNSON MACHINE COMPANY
MANCHESTER CONNECTICUT

Trouble-Proof

AGAINST CORROSION, CLOGGING AND PRODUCT CONTAMINATION

GRINNELL-SAUNDERS DIAPHRAGM VALVES

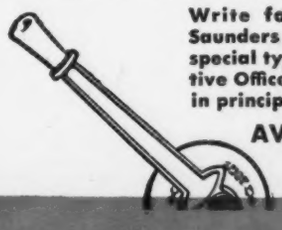
Screwed or Flanged Patterns

Users of compressed air, gases, viscous or corrosive liquids, food products and fluids containing suspended solids – this is the valve that may eliminate your troubles!

- ★ No packing glands to demand constant attention.
- ★ Non-rising stem eliminates breakage. Stem is protected from dust, weather and corrosion.
- ★ Working parts completely isolated from the fluid. No sticking, corroding or clogging to interfere with easy operation and tight closure. No contamination from valve lubricants.
- ★ Compressor and finger plate combine to support the diaphragm in all positions.

The large area of contact of the diaphragm on the seat, plus the resilience of the diaphragm, permits positive closure even when foreign matter is trapped.

- ★ No metal-to-metal seats to become damaged, wire drawn or scored. No refacing, reseating or grinding is required.
- ★ Streamlined passage without pockets reduces friction to a minimum and prevents accumulation of sludge and foreign solids.
- ★ The valve body – the only metal that could contact the fluid – can be completely lined with glass, porcelain, lead, rubber or synthetic compounds (flange type only) to suit service requirements.

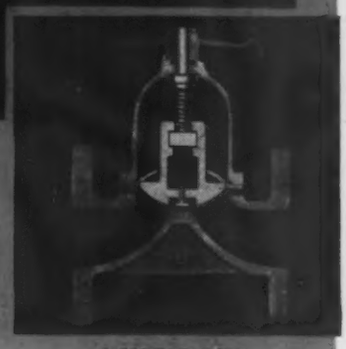


Write for catalog describing Grinnell-Saunders Diaphragm Valves — standard and special types. Grinnell Company, Inc., Executive Offices, Providence 1, R. I. Branch offices in principal cities.

AVAILABLE IN SPECIAL TYPES

The "quick operating" lever design is one of several types.

VALVE OPEN

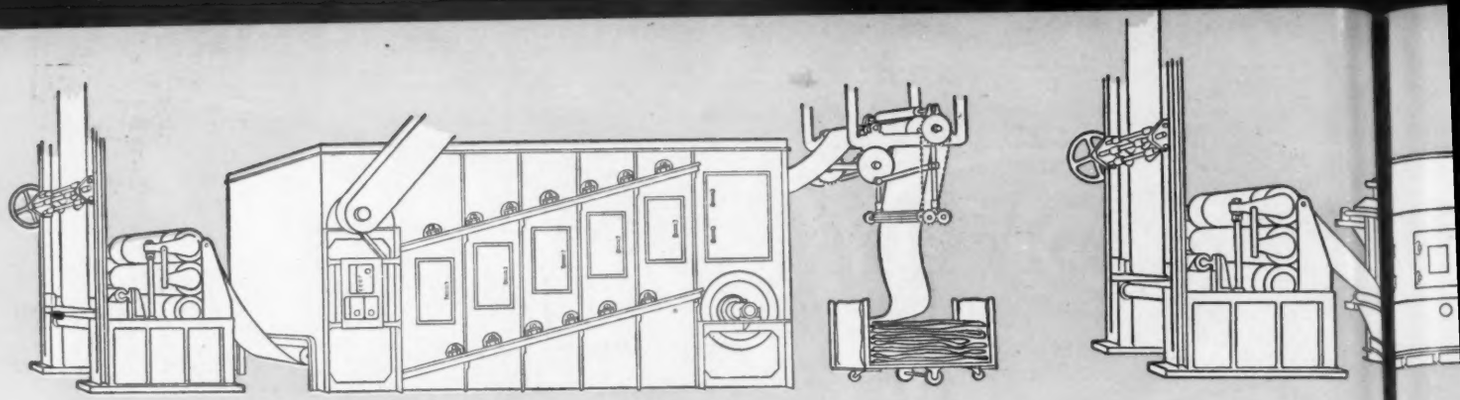


VALVE CLOSED

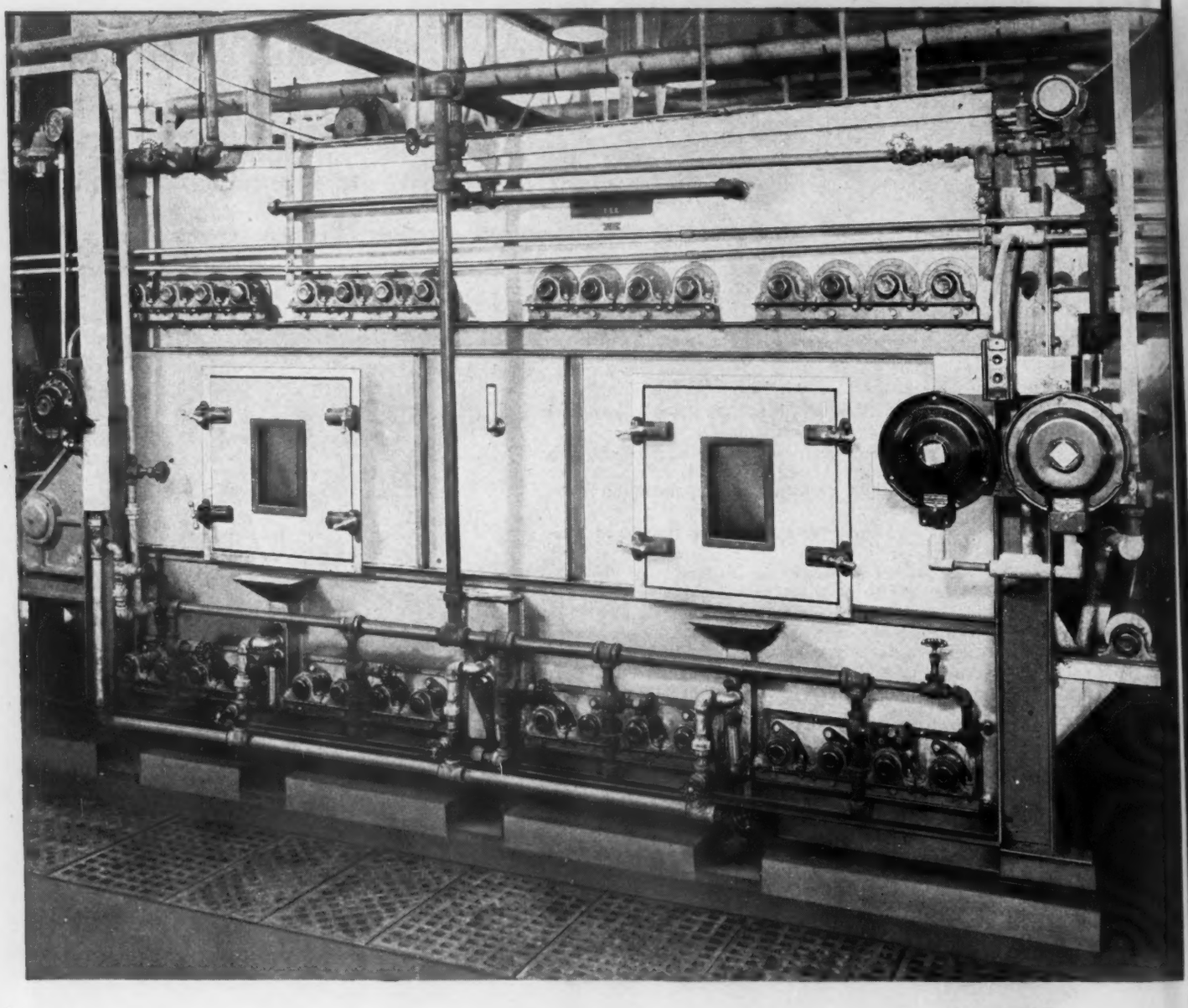
GRINNELL

FOUNDED 1850

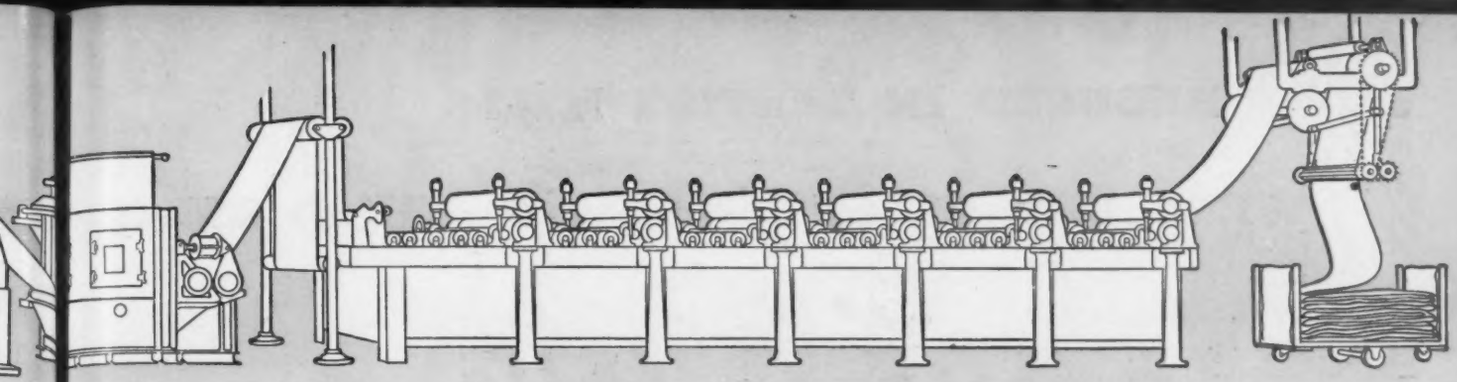
WHENEVER PIPING IS INVOLVED



In the first section of the Butterworth Vat Dyeing Range, goods enter a 3-roll padder in which the color is applied in pigment form, followed by drying on a special type air-dryer and folding onto a hand truck from a 3-roll folder.



The Steamer used in the Butterworth Vat Dyeing Range is one of the most efficient textile finishing machines ever produced. By liberating "live" steam in an air tight chamber, this machine assures penetration of the dye into the heart of the fabric, and more thorough color fixation than ever before possible. Cloth enters at top for straight steam processes. Cloth enters at bottom through a liquid seal for steam and liquid booster processes. Choice of cloth entrance depends upon process used to obtain desired effects.



In the second section of the Butterworth Vat Dyeing Range, goods are impregnated with chemicals on a 3-roll padder and then enter a steamer. (Note choice of cloth entrance—at top for straight steam processes or at bottom through a liquid seal for steam and liquid booster processes.) After steaming, goods pass through a water seal and squeeze rolls, and are washed in a 6-box washer, followed by folding onto hand truck.

FAST SHADES AT 120 YARDS PER MINUTE WITH NEW VAT DYEING RANGE

Follow one yard of goods through the Butterworth Vat Dyeing Range . . . then compare the results with slow, one-step-at-a-time vat dyeing methods.

You will discover that the new vat-steam method of continuous dyeing produces fast shades at speeds ranging up to 120 yards per minute. You will see uniform color application in the pigment padder. You will see savings up to 25 per cent in dyestuff costs.

You will marvel at the thorough color fixation achieved with the Butterworth Steamer, the gentle, thorough efficiency of the Butterworth Compartment Washer.

Find out today about the economies and increased production of the Butterworth Vat Dyeing Range. Write us.

BUTTERWORTH

H. W. BUTTERWORTH & SONS COMPANY, Philadelphia 25, Pa.

TEXTILE FINISHING MACHINERY COMPANY DIVISION, Providence, R. I. • 1211 Johnston Bldg., Charlotte, N. C. • W. J. Westaway Co., Hamilton, Ont. • ARGENTINA: Storer & Cia., Chacabuco 443-49, Buenos Aires • BOLIVIA: Schneiter & Cia., Ltda., La Paz • CHILE: Schneiter & Cia., Ltda., Casilla 2864, Santiago • COLOMBIA: C. E. Halaby & Co., Apartado 139, Medellin • ECUADOR: Richard O. Custer, S. A., Quito • MEXICO: I. Slobotzky, Avenida Uruguay 55, Mexico, D. F. PERU: Custer & Thommen, Casilla 733, Lima • URUGUAY: Storer & Cia., Ltda., Calle Paysandu 1022, Montevideo. VENEZUELA: Herbert Zander & Co., Apartado Postal 1291, Caracas.

GLARE REDUCED IN TEXTILE MILLS WITH BLUE RIDGE *Frosted* AKLO GLASS

One of the many cotton mills that has installed Blue Ridge *Frosted* AKLO to reduce sun glare and heat.

In textile mills where *good vision* is important and temperature control necessary, *Frosted* AKLO may be made into *Thermopane** units for the dual purposes of insulation and protection from glare and sun heat.

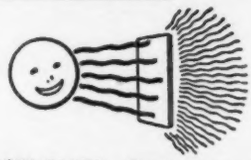
In cotton, woolen, silk and rayon plants — wherever more comfortable temperature and better illumination are desired—Blue Ridge *Frosted* AKLO Glass offers definite advantages.

Frosted AKLO, manufactured by the Blue Ridge Glass Corporation of Kingsport, Tennessee, is a cool-appearing, blue-green glass, which greatly reduces sun glare. This feature lessens the possibility of eyestrain... provides better eye performance on the job. In addition, it excludes objectionable solar heat—making the working area more comfortable in summer. When made into *Thermopane* insulating glass units, *Frosted* AKLO helps maintain accurate temperature and humidity control.

Frosted AKLO is sold by Libbey·Owens·Ford distributors. Ask the one nearest you for a Radiometer demonstration of AKLO's effectiveness. Blue Ridge Sales Division, Libbey·Owens·Ford Glass Company, 99106 Nicholas Building, Toledo 3, Ohio.

*Reg. U. S. Pat. Off.

GET THESE THREE ADVANTAGES OF *Frosted* AKLO



REDUCES GLARE—Eliminates eyestrain and employe fatigue.

RETARDS SUN HEAT—Keeps workers comfortable on their jobs.

RENDERS SAVINGS—Eliminates shades or painting of glass.

L O F

BLUE RIDGE AKLO GLASS

Heat-Absorbing · Glare-Reducing · Figured and Wire Glass

BLUE RIDGE GLASS CORP. MANUFACTURERS OF QUALITY GLASS KINGSPORT TENN.

COLOR

. . . the Master Salesman

HOME MAKERS are more color conscious today than ever before. Give them distinctive, harmonizing colors in yarn dyed fabrics and these fabrics will sell themselves. But to *keep* them sold your colors should have good light fastness.

Without extra charge we can help you in selecting the best colors for the purpose, if you so desire. Our 36 years of experience in fast color yarn dyeing should prove of value to you.

Franklin Process is "conveniently yours" from 4 widely separated plants with a total capacity of over 800,000 lbs. a week; also "uniformly yours", since all plants use identical formulas for standard shades and the same type of dyeing equipment.

Make Franklin Process Colors YOUR Master Salesman.

Franklin Process

LARGEST PACKAGE DYERS IN THE WORLD

New York Representative,
40 Worth Street

PROVIDENCE

PHILADELPHIA

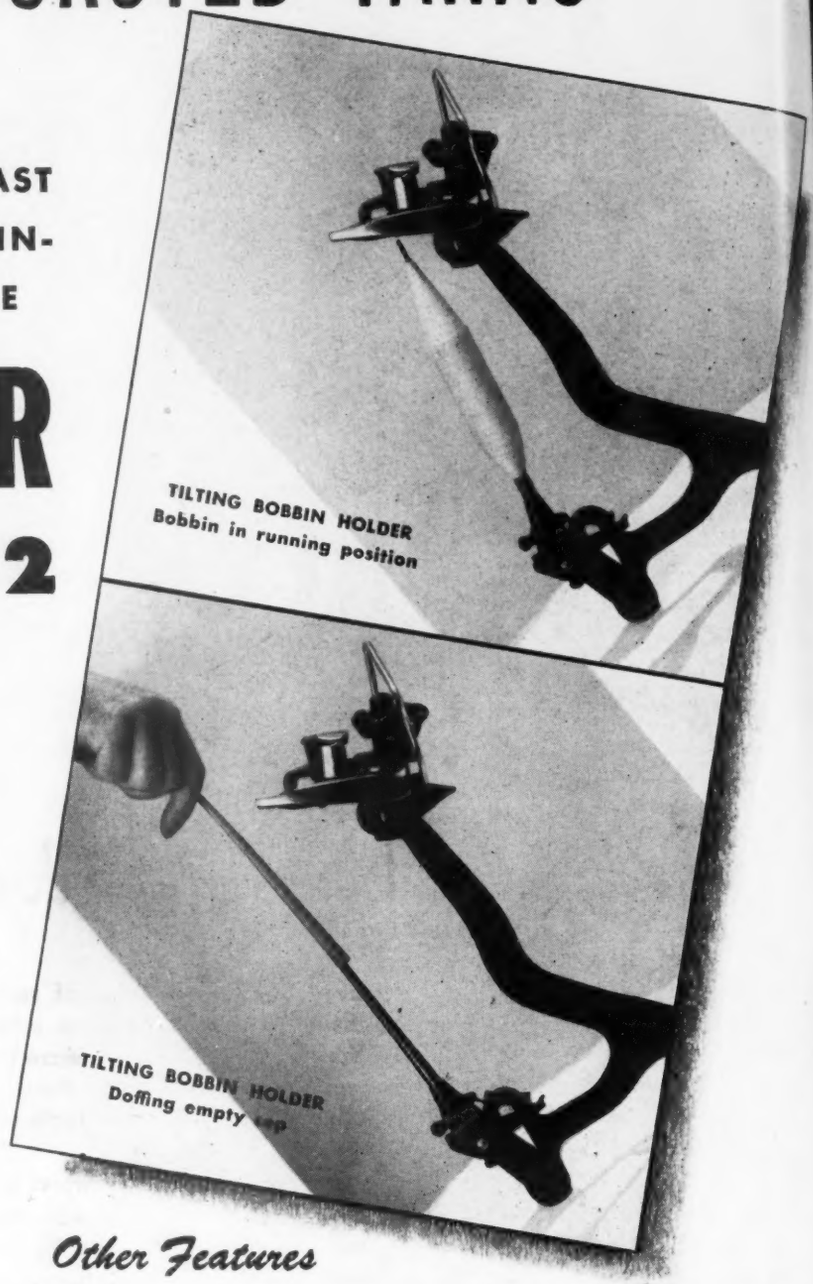
GREENVILLE

CHATTANOOGA

FINE WORSTED YARNS

THEY UNWIND TO THE LAST INCH OF YARN WITH MINIMUM BREAKAGE ON THE

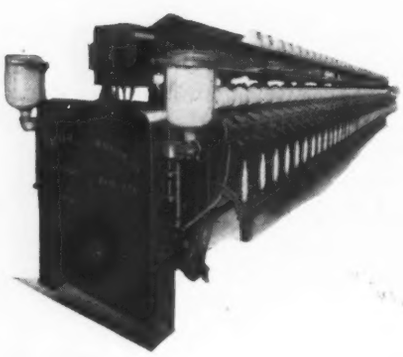
FOSTER MODEL 102



Here's Why:-

1. Supply is in line with and near enough to tension bracket to get a SINGLE BALLOON, reducing strain on yarn.
2. Supply skewer is long enough so that a mule cop will not jump off.
3. Although supply skewer swings out for loading, it always swings back to its original setting in exact alignment with tension bracket.

SEND FOR CIRCULAR A-95

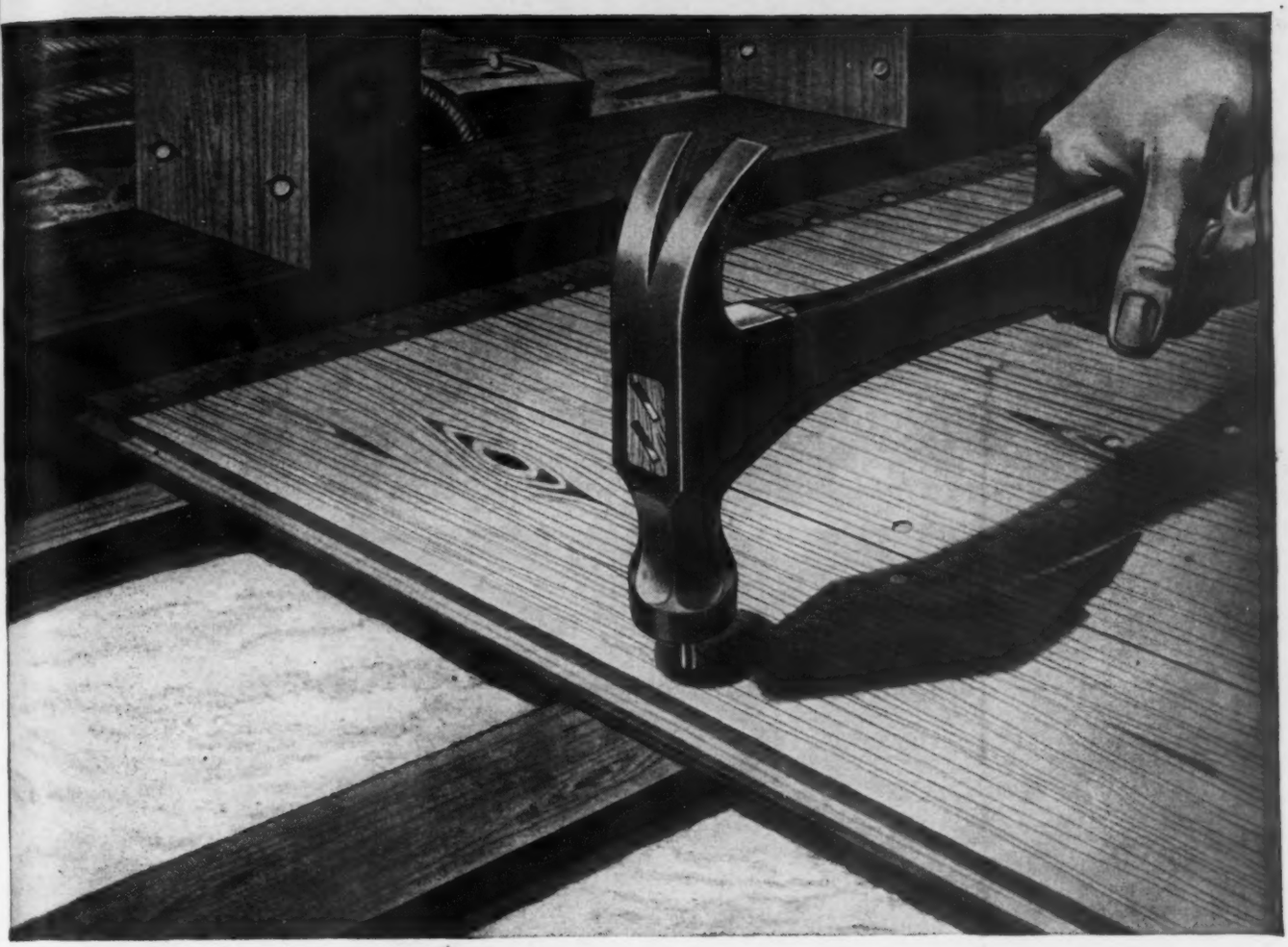


Other Features

1. One well known mill is running 70's worsted yarn at 400 y.p.m., getting approximately twice the production as from obsolete models.
2. Several different types of self threading wax tension and slub catching attachments are available for this machine. They promote quick threading, even tension, and automatic inspection. Circular on request.
3. Machine may be equipped to wind same type of cone as produced by older models still in use, so that no segregation of cones is necessary.
4. Machine will produce any angle of wind from 9° to 18°,—important if you radically change the type or count of yarn.
5. May be equipped with conditioning attachment.

FOSTER MACHINE CO., Westfield, Mass.

SOUTHERN OFFICE, Johnston Bldg., Charlotte, N. C.; CANADIAN REPRESENTATIVE, Ross Whitehead & Co., Ltd., University Tower Bldg., 660 St. Catherine St., West Montreal, Quebec.



"Down-to-earth" floors call for down-to-earth thinking

Whenever you lay floors at grade, or sub grade . . . it's particularly important to use pressure-treated wood.

The moisture that is almost always present encourages the growth of fungi that cause decay. Pressure treatment poisons the food supply of the fungi. Treated wood delivers the many years of service that you have a right to expect. You'll find, too, that pressure treatment improves the wear resistance of the wood . . . a profitable extra dividend.

Remember, decay in wood is not the natural result of old age, but of *avoidable disease.* In 21 modern, fully-equipped treating plants, Koppers "inoculates" all varieties of structural lumber against this threat. Special selected treatments give enduring protection against the hazards of the individual service: decay, termites or marine borers . . . acid attack . . . fire. Our Bulletin G-23 will give you full information on the various treatments, and show you some of the many places where pressure-treated wood is serving and saving. Ask for a copy. Koppers Company, Inc., Pittsburgh 19, Pa.

K

KOPPERS

PRESSURE-TREATED WOOD

KOPPERS COMPANY, INC.

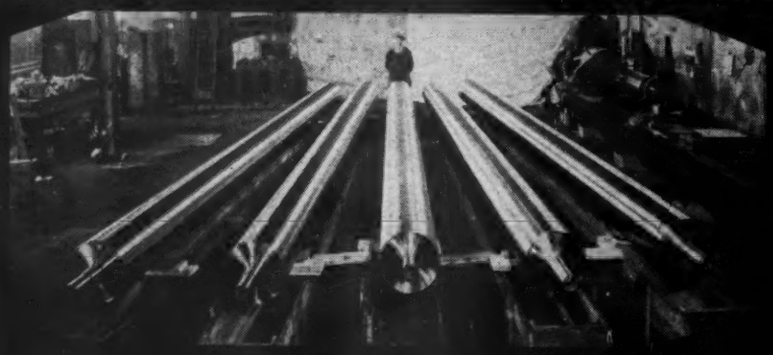
PITTSBURGH 19, PA.

UNISTEL

STAINLESS STEEL

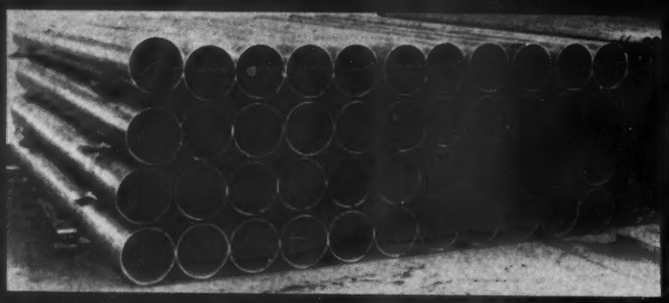
BACK DRYERS
CAN DRYERS
ROLLS
WELDED TUBING
KETTLES
TANKS
CUSTOM BUILT EQUIPMENT
FABRICATED PIPING

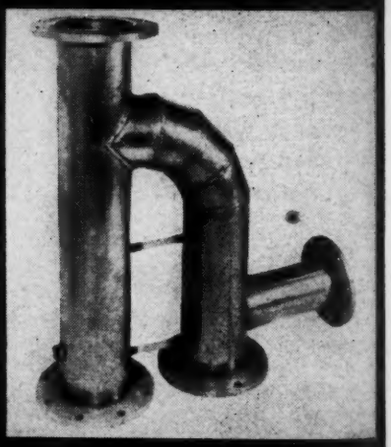
Where pressures are a factor we construct in accordance with the A.S.M.E. code.



Our experience covers all types of stainless steel. Consult us on your corrosion problems.

Stainless Rolls





Left—Custom Built Stainless Equipment
Above—Welded Stainless Tubing
Right—Fabricated Stainless Piping

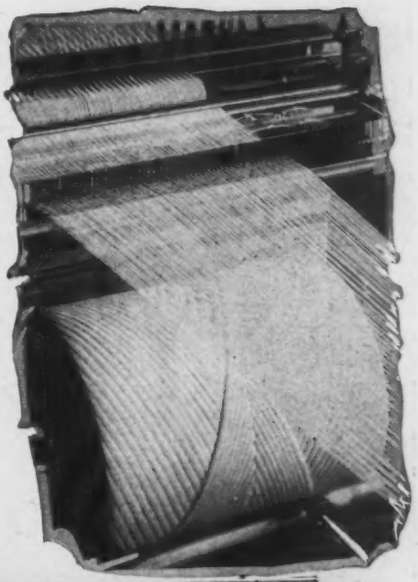
Engineers—Designers—and Builders of Back Dryers, Can Dryers, Kiers, Kettles, etc.

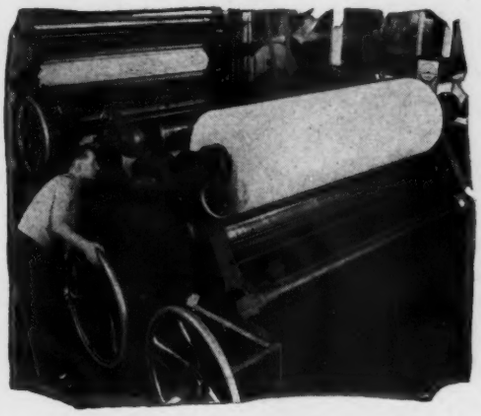
UNITED STEEL OF AMERICA, INC.

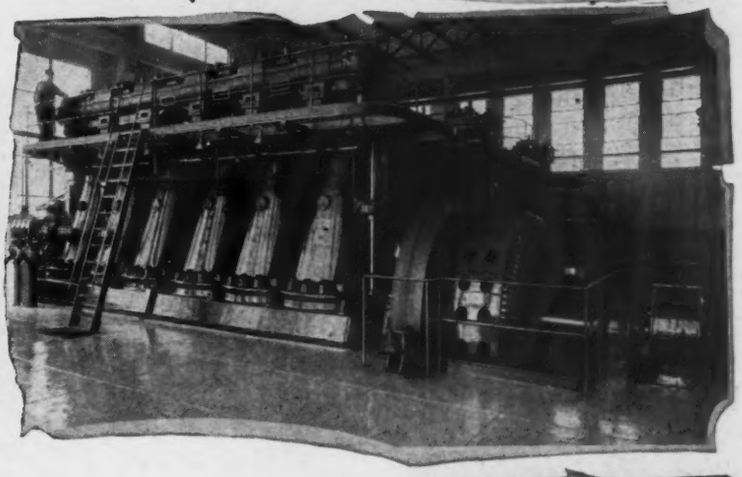
30 ROCKEFELLER PLAZA
NEW YORK 20, N. Y.

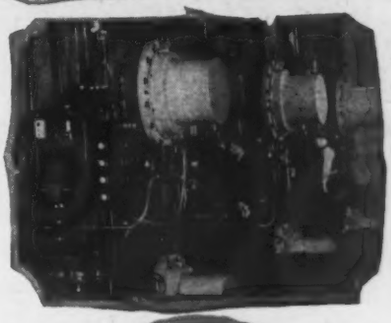
Canadian Representatives: United Steel Corporation Ltd. of Canada, Toronto

"Lowest Repair Bills in History"









. . . SINCE SWITCHING TO *Tycol* ENGINEERED LUBRICATION

"No sticking valves . . . negligible cylinder wear — with Tycol DIESEL OILS."

"Absence of sludge and corrosion . . . no wear on bearings — with Tycol RIO TURBINE OILS."

"Superior performance under high-temperature service — with Tycol STEAM CYLINDER OIL."

"Complete rust protection . . . corrosion eliminated — with Tycol NO-RUST-OLS."

"Maintenance costs cut 20% . . . since using Tycol E.P. Lubes."

That's how engineers and operating men express their satisfaction with the Tycol Industrial Oils and Greases they are using.

There's a Tycol oil and grease for every industrial need. For complete data on the Tycol lubricant best suited for your needs, get in touch with your nearest Tide Water Associated office today.

LUBRICATION—"ENGINEERED TO FIT THE JOB"

TYCOL
INDUSTRIAL LUBRICANTS

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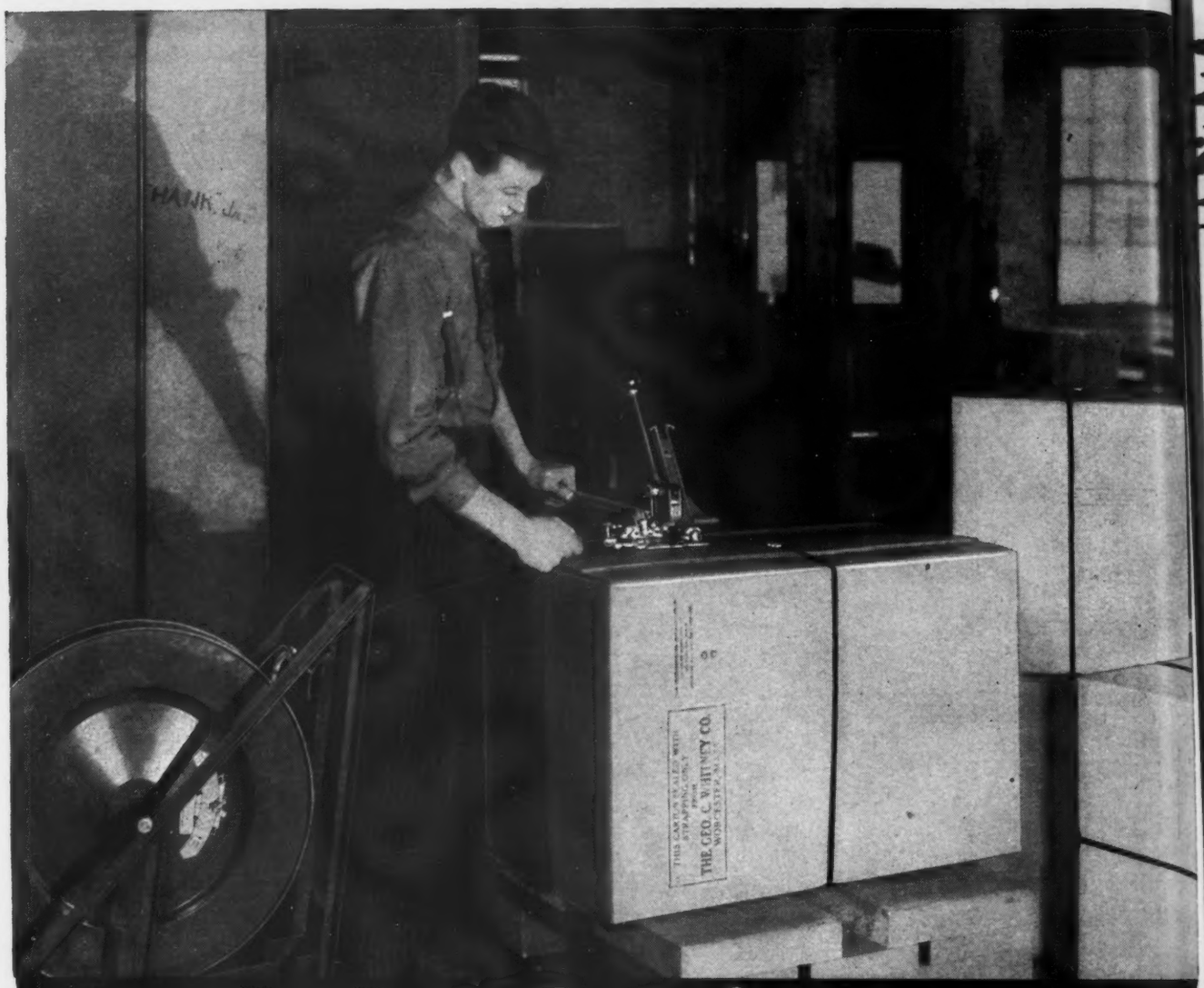
Pittsburgh • Philadelphia

TIDE WATER ASSOCIATED OIL COMPANY
17 BATTERY PLACE • NEW YORK 4, N. Y.



Today's Textiles ARE "BOUND TO GET THERE"

...WITH Acme Steelstrap

Doc. Steelstrap
REG. U. S. PAT. OFF.

When strapped with Acme Steelstrap, textiles boxed, bundled or baled are locked in strong steel bands . . . secure against damage, pilferage and all everyday shipping hazards. In addition, labor, weight, dunnage and warehousing space are saved.

Acme Steelstrap Tools permit the speediest operation and are available for immediate delivery.

Our large field staff works exclusively for us and for you—we urge you to take advantage of our complimentary shipping service consultation.

NEW YORK 7 ATLANTA CHICAGO 8 LOS ANGELES 11

ACME STEEL COMPANY

ACME STEEL CO.
CHICAGO

HYSTER INDUSTRIAL TRUCK SERVICE COVERS THE WORLD

HYSTER factories and Hyster dealers believe in follow-through. That's why, when you purchase a Hyster industrial lift truck, you can depend on prompt service whenever parts replacements or mechanical adjustments are needed.

Hyster makes lift trucks to the highest standards in design, engineering, materials. But any machine that takes the beating of hoisting, transporting and stacking heavy loads every day needs skilled attention on occasion. Hyster dealers know this. They know also that a Hyster temporarily out of service for lack of parts or repairs is time and money lost for its owner.

Your Hyster dealer is a good man to know. He services—as well as sells—Hyster pneumatic tired industrial trucks with capacities ranging from 2000 to 30,000 pounds.

HYSTER COMPANY

2922 N. E. Clackamas, Portland 8, Oregon
1822 North Adams Street, Peoria 1, Illinois

☆ ☆ ☆

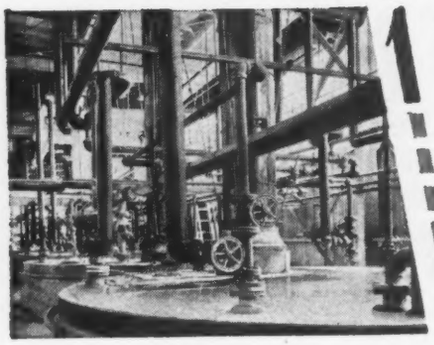
Sold and Serviced Through Distributors in Principal Cities All Over the World

World's Largest Manufacturer of Pneumatic Tire Lift Trucks and Straddle Trucks

The 1, 2, 3 OF LICKING YOUR ACID PIPE PROBLEMS

The problem of controlling corrosion in the conveying of acids and other corrosive solutions is tough enough to begin with. But it is further complicated by such factors as elevated or fluctuating temperatures, pressure, vacuum and vibration or other mechanical stress of equipment.

That's why National Lead—as a result of its years of experience in every field handling corrosive solutions and gasses—makes available to you the wide variety of pipe described below. And why we offer you the first-hand "know how" gained by our technical staff from thousands of installations, to help you select the right pipe for every acid-conveying job.



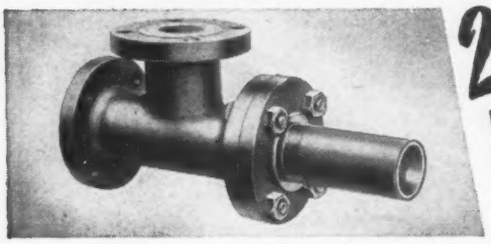
Making acid toe the line . . . Chemical Lead Pipe and Fittings employed in connection with a battery of digestors in a large industrial plant.

1 **Lead Pipe.** Widely used throughout industry is our standard Chemical Lead Pipe. Made of highly pure lead, it has a long record of successful applications. Like all of our lead pipe and pipe lining, it is fabricated by an extrusion process which assures uniform wall thickness, free flow and freedom from porous or defective spots.

Other highly useful types are made by alloying small amounts of other metals with the chemical lead.

For example, there is Tellurium Lead Pipe. This has added corrosion resistance at high temperatures and the ability to toughen and increase its tensile strength under mechanical stress. Still a third property—due in part to its capacity to work-harden—is a higher endurance limit and therefore greatly improved resistance to failure under vibratory stress.

Again, there is Antimonial Lead Pipe, made with a base of either chemical or Tellurium lead. When the antimony content is 6%, this insures a mechanical strength about twice that of chemical lead. And the greater hardness also means improved abrasion resistance—a real advantage where erosion is a problem. Recommended only for temperatures below 240° F.

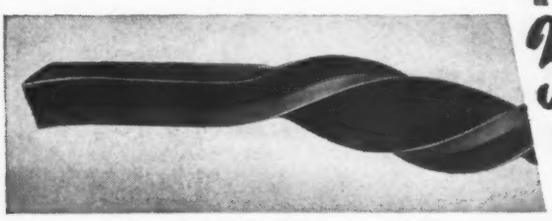


The strength of steel or iron, plus the corrosion resistance of lead . . . twin advantages of this "United" Lead-lined Pipe. Note the uniformity of the lead lining.

2 **Cold Expanded Lead-Lined Pipe.** Where the strength of iron or steel is needed—for example, to withstand pressure or other mechanical stress—our "United" Lead-lined Cast Iron or Steel Pipe has proved highly serviceable. It has the outer strength needed plus the inner resistance of its lead lining to corrosion.

The lining is fabricated in continuous lengths of uniform, seamless pipe, then cold expanded inside the iron or steel tube. This assures a tight fit and a lining smooth, uniform and free of defects.

Cold Expanded Lead-lined Pipe, as well as the "United Tubond" described below is made in flanged sections, with the lead lining carried over the face of the flange to give a positive lead-to-lead joint. Moreover all iron and steel pipe used meets the standards of the American Society of Testing Materials.



Once bonded . . . it stays bonded! A section of "Tubond" Lead-lined Steel Pipe, twisted to prove the inseparability of the metals. Steel and lead are married to stay.

3 **"United Tubond" Lead-Lined Pipe.** To do a job where equipment must stand extreme vibration, pressure, vacuum or temperature change—National Lead has developed "United Tubond" Lead-lined Pipe. The lead lining is bonded to the iron or steel tube by a special process, so permanent that there can be no separation or creep of the lining.

As shown in the illustration, the steel or iron can be violently twisted, but there will be no let-go of the lead.

A complete line of standard lead and lead-lined fittings is available for use with the various types of pipe. In addition, National Lead manufactures lead-covered pipe to individual specifications.

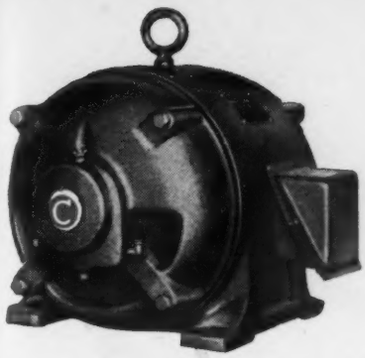
No matter whether you want a single valve . . . sheet lead for lining a tank . . . or a complete acid recovery plant . . . National Lead can supply you. You are invited to consult our technical staff on any equipment problem.

NATIONAL LEAD COMPANY
111 Broadway, New York 6, N. Y.

If Acid Handling is your problem . . .

Go "National" for Lead

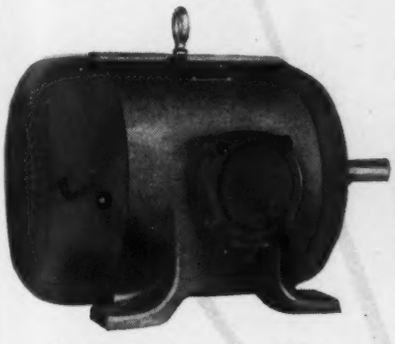
Offices and Plants in Principal Cities and Canada



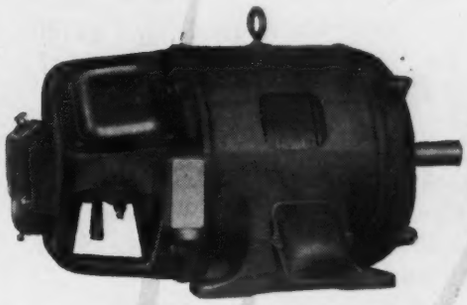
Century Form J Open Rated Motor

Century Splash Proof Motor

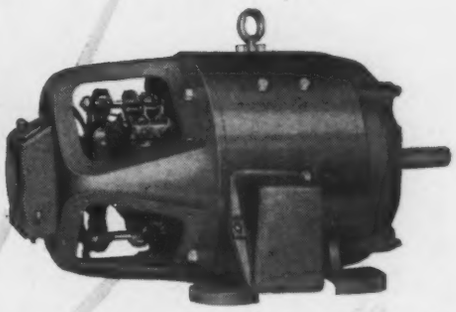
Century Totally Enclosed Fan Cooled Motor



Century Explosion Proof Motor

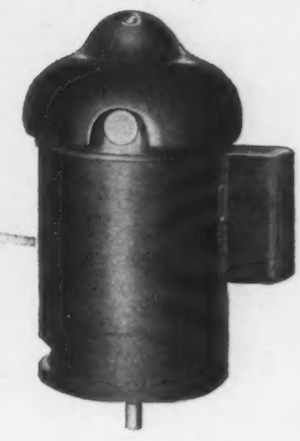


Century Slip Ring Motor



Century Direct Current Motor

Get the Top Performance Your Machine is Designed to Give—*With a Standard* CENTURY MOTOR



Century Jet Pump Motor

The wide range of types and sizes of Century motors from 1/20 to 400 horsepower — plus all the standard frames that give protection from destructive atmospheres, falling solids and dripping liquids — means that nearly all electric motor driven machines can have the advantages of Century motors.

Selection of the correct Century motor at the time the equipment is designed can offer many advantages. Standard motors often mean a saving in cost over special designs; redesign of equipment is simplified and the motor does not become obsolete.

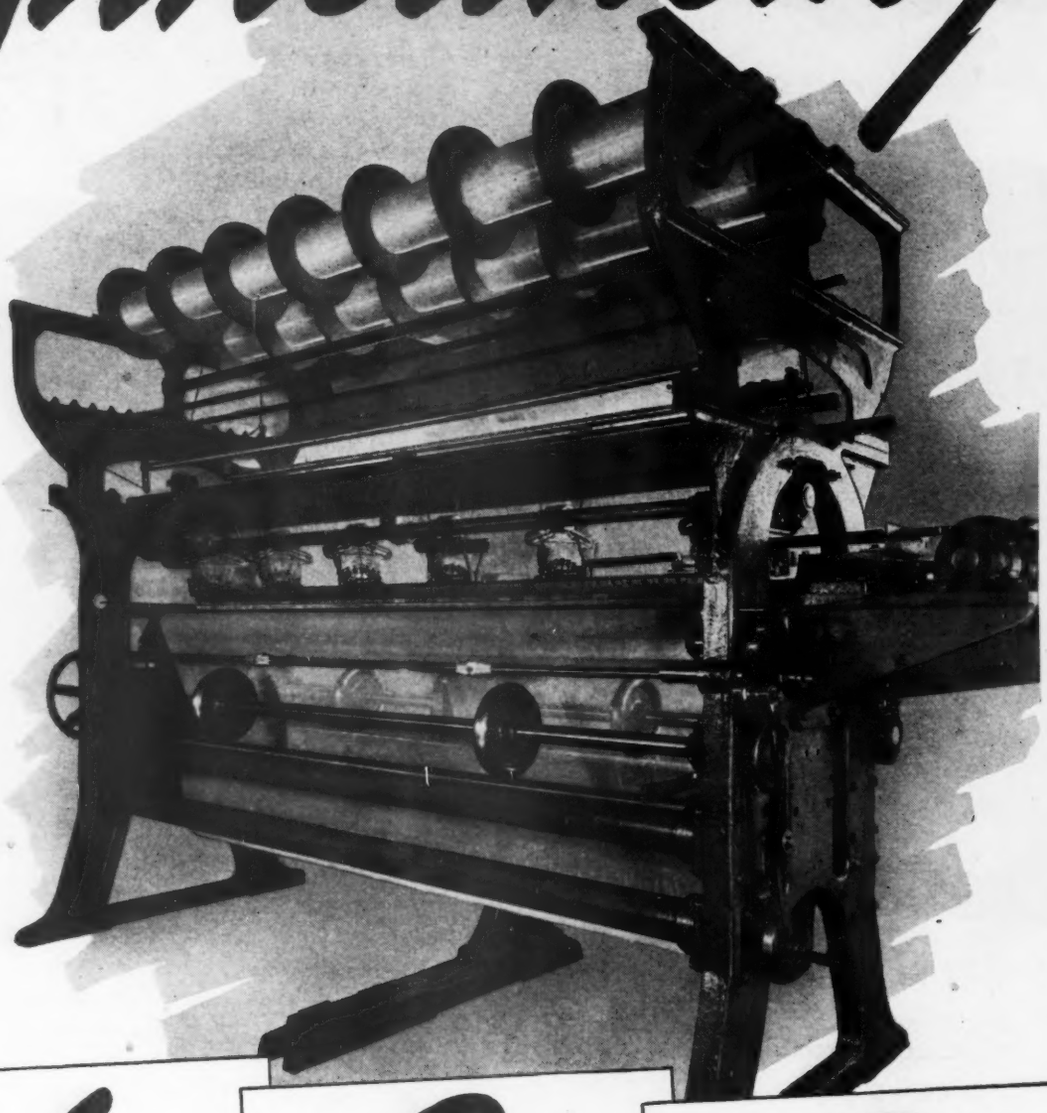
Specify Century motors on all your electrically powered equipment. They are engineered to meet the requirements of the machines they drive to assure top performance.

Century C MOTORS

CENTURY ELECTRIC COMPANY • 1806 Pine Street • St. Louis 3, Missouri

Offices and Stock Points in Principal Cities

Announcing



1. NEW HIGH SPEEDS

2. WIDE VERSATILITY

3. UNUSUAL ACCESSIBILITY

KIDDE MANUFACTURING CO., INC., BLOOMFIELD,

the Kidde Knitter!

THE NEWEST IN RASCHEL-TYPE WARP KNITTING MACHINES

1. The Kidde Knitter operates at double the speeds of pre-war machines.

• The exceptionally high sustained operating speeds of the Kidde Knitter -even on complicated patterns—are made possible by a radically new drum drive, combining advantages of index feed and worm feed . . . and by a new motion on needle bars instead of the conventional piston type movement.

The Kidde Knitter is ruggedly designed throughout to withstand the wear and tear of these high speeds . . . and the stresses of knitting materials such as rubber. Framework is extra-strong, extra-rigid, tubular construction. Anti-friction bearings are used liberally.

2. It handles an exceptionally wide range of fabrics and patterns.

• The Kidde machine will knit practically any type of thread, yarn or elastic. Among the materials that can be produced are: ELASTIC FABRICS—for corsets, girdles, brassieres. DRESS FABRICS. VEILINGS and NETTINGS. CURTAINS. NARROW FABRICS—edgings, braiding, laces. SHOE CLOTH. KNITTED OUTERWEAR FABRICS—for sweaters, polo shirts.

The Kidde Knitter is readily adapted to simple or intricate patterns. Single or double needle bars can be employed. A full 100 inches can be knit.

3. Design of the Kidde Knitter makes it easy to set up patterns on machine.

• The Kidde Knitter has been built with maximum accessibility to all parts to make pattern set-up and changes easy . . . and quick. The entire swing bar assembly can be adjusted as a unit . . . both vertically and horizontally.

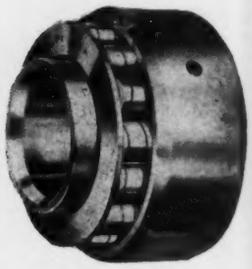
The stroke of the latch needles, as well as the guide needles, can be simply adjusted without changing cams. The full cloth roller can be removed from the side of the machine easily.

The Kidde Knitter is the outcome of the combined experience of Kidde machine designers and of textile men with broad practical background in the field of warp-knitted goods. A Kidde Knitter is operating at the plant of Kidde Manufacturing Co., Inc., Bloomfield, New Jersey. Write today for an appointment for a demonstration.

The word "Kidde" is the trade mark of Walter Kidde & Company, Inc., and its affiliated companies.

NEW JERSEY

WEAVERS *LIKE* TO OPERATE LOOMS EQUIPPED WITH *HYATT* ROLLER BEARINGS



AND THEY CAN GIVE YOU GOOD REASONS WHY:

Less than half the effort is required to set the reed correctly to the fell of the cloth. No mark in the cloth occurs.

New looms start up easily. Settings stay put because the Hyatt bearings don't wear.

Transfer of bobbins continues to be accurately made because rockershaft bearings maintain original centers.

With Hyatt bearings oil or grease do not leak out on fabric or floor.

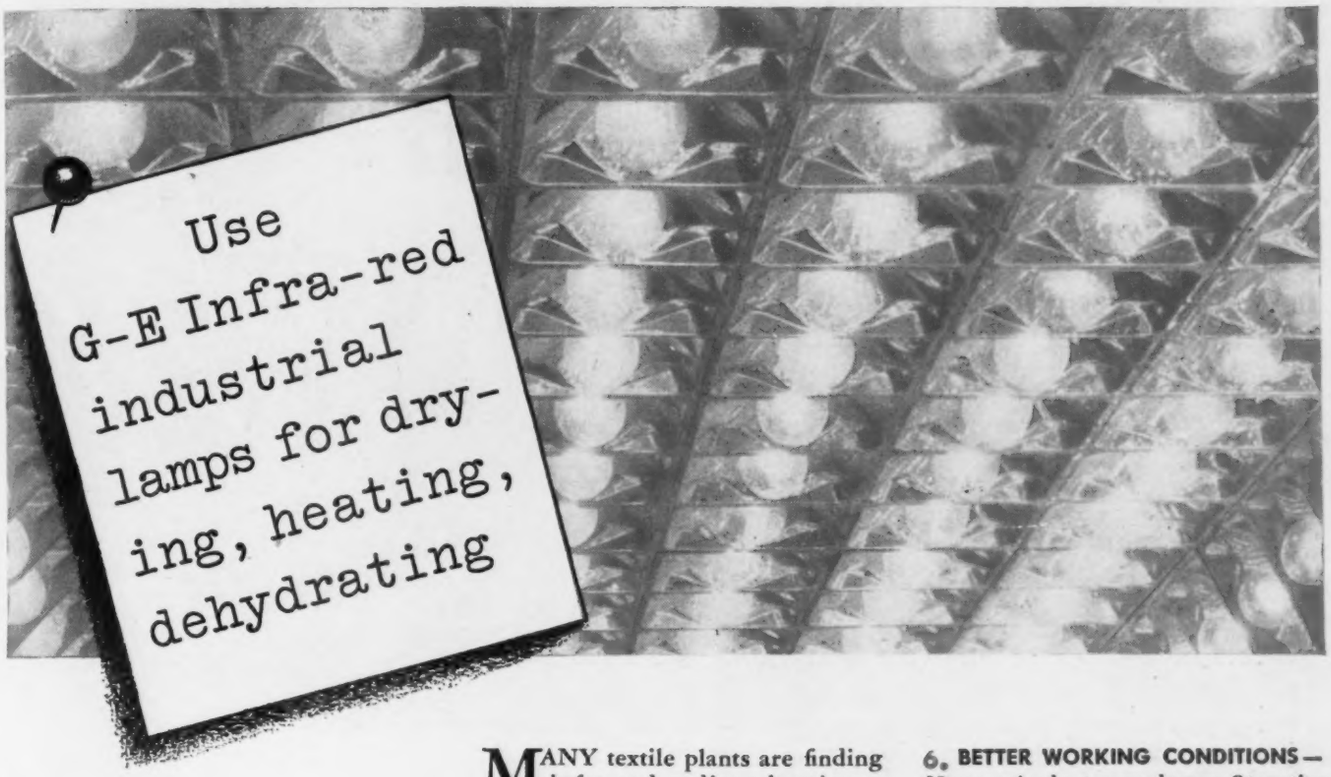
Bearings require very little lubricant, almost no maintenance even after 15 years of service.

A weaver produces more and better cloth when he likes his looms. He is less tired at the end of the shift.

Specify Hyatts for your new looms at the following positions: crankshaft, cam shaft, rockershaft, takeup shaft and whip roll.

HYATT BEARINGS DIVISION · GENERAL MOTORS CORPORATION · HARRISON, N. J.

Hot Tip on a Faster Finish!



APPLICATIONS OF INFRA-RED IN TEXTILES INCLUDE:

Setting starches
Pre-drying fabrics
Dehydration in Sanforizing
Drying impregnations
Drying thread after slashing
Drying printed cloth materials
Curing dyes
Drying rayons
Accelerating processes

MANY textile plants are finding infra-red radiant heating a practical means of saving time, reducing costs and increasing production. You can gain these six important advantages by installing radiant ovens equipped with G-E Infra-red Industrial Lamps:

1. **LOW FIRST COST**—*Equipment is simple and easy to install.*

2. **FLEXIBILITY**—*Infra-red ovens are compact, movable, readily adapted to a variety of operations. Utilize plant space to best advantage.*

3. **INSTANT HEATING**—*Infra-red energy creates heat on contact with work. Ovens can be turned on and off as required.*

4. **FASTER PRODUCTION** — *Properly engineered applications reduce processing time.*

5. **LOW MAINTENANCE COST** — *Minimum inspection and repair.*

6. **BETTER WORKING CONDITIONS**— *No excessive heat around ovens. Operation is safe and clean.*

YOU'LL GET BEST RESULTS with G-E Infra-red Industrial Lamps by consulting a recognized radiant oven manufacturer. He can give you the quality of oven engineering that is essential to successful operation.

GENERAL ELECTRIC offers a complete line of Infra-red Industrial Lamps, from 250 to 1000 watts. Most popular types, in 250 and 375-watt sizes are: (1) R-40 with reflector hermetically sealed in bulb, giving smooth, even distribution of radiant energy. (2) G-30 with clear bulb, suitable for open reflector installations. Both types have mechanical bases.

FOR FURTHER INFORMATION on infra-red applications write General Electric Lamp Dept., Division 166 TW-10, Nela Park, Cleveland 12, O.

G-E LAMPS
GENERAL ELECTRIC

LOOK FOR *UNWRITTEN* SPECIFICATIONS, TOO

There are written and unwritten specifications. The ones by which size and shape and breadth and depth are regulated are the written specifications. The ones upon which prestige is built are the unwritten specifications.

Speed, load, car size, controls, such terms as these are familiar in the written specifications for an elevator.

Safety, satisfactory service, economy of operation, long life, these are associated with the unwritten specifications of an elevator or escalator manufactured by Otis. They are the end results of the skills perfected by experience and the determination to provide the finest vertical transportation possible.

OTIS ELEVATOR COMPANY

Offices in all principal cities

WHETHER YOU HANDLE...

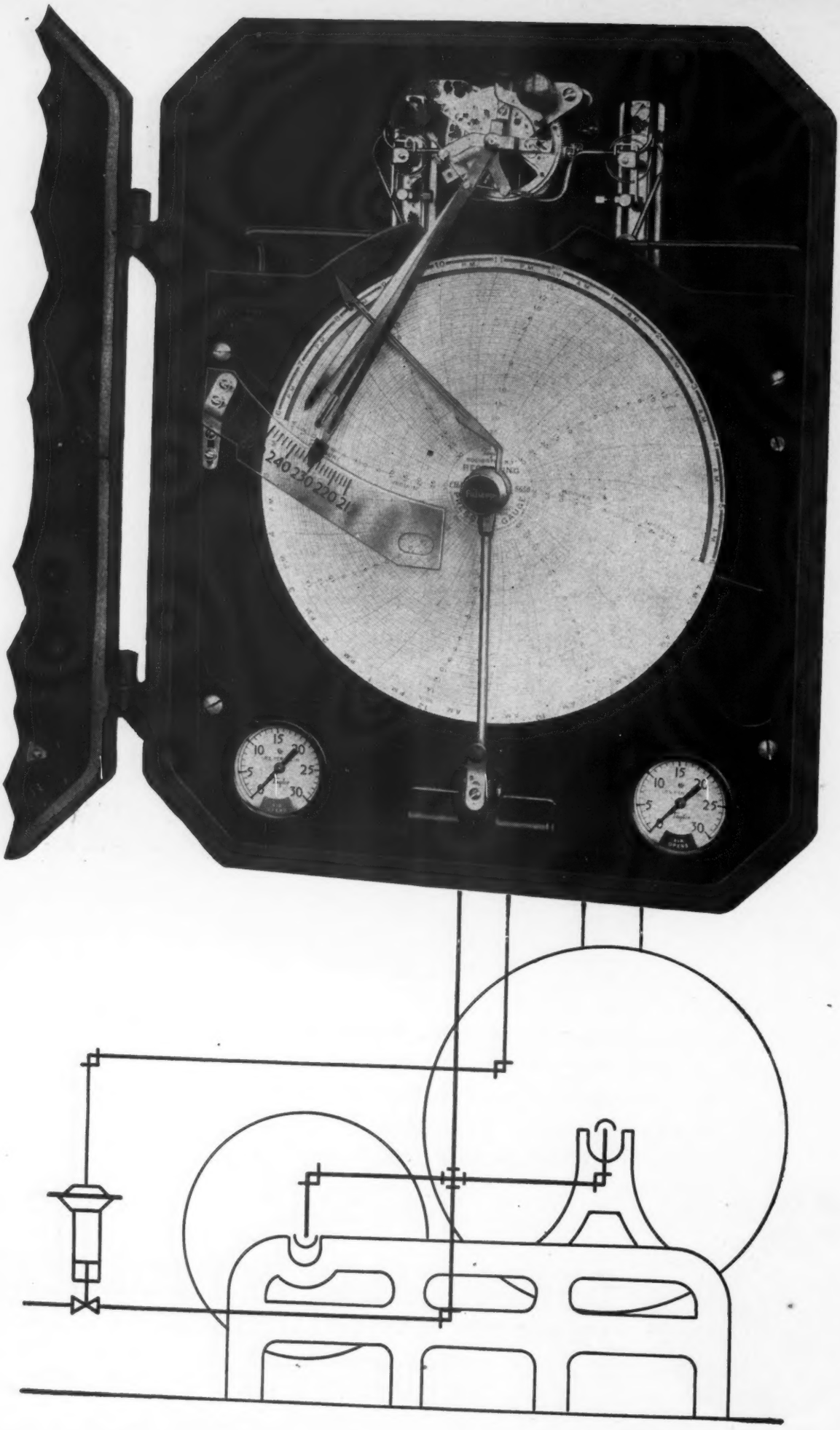
Why not take advantage of Becco's many years of specialized bleaching experience? Ask our engineers and chemists to advise you what method of bleaching is most suitable for processing your goods, regardless of the type of fibre used. This expert bleaching "know-how" can be yours, free. Write to:

BECCO SALES CORPORATION

AGENTS FOR BUFFALO ELECTRO-CHEMICAL CO., INC.

6 Sawyer Avenue, Buffalo 7, N. Y.

New York Boston Philadelphia Chicago Charlotte


240 230 220 210
15
10
20
5
25
0
30

Here's the last word in completely automatic Slasher Control!

IT'S Taylor's new automatic cylinder control which maintains constant, uniform temperature across your slasher cylinders. Scores of these controls have been thoroughly field-tested and are working to complete satisfaction. This is the final step toward completely automatic control of your entire slashing operation including size cooking, storage kettle control and size box control as illustrated below.

By maintaining correct drying cylinder temperatures Taylor Controls give you:

Proper setting of the size on the warp

Correct laying and binding in of the warp fibres

Retention of the proper moisture in the warp

Decreased shedding of dried size

Assurance of no steam consumption over actual requirements

All this adds up to stronger, more elastic warps insuring you less breakage, fewer loom stoppages and increased production at decreased costs.

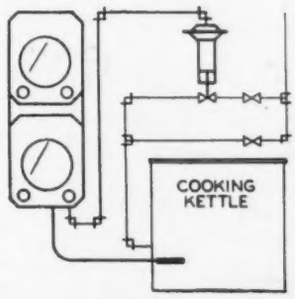
Boss of the job is a dual instrument, the Taylor Double-Duty Fulscope Temperature and Pressure Controller (opposite page), which controls both temperature of the condensate and pressure in the slasher cylinders.

When switching from one weight yarn to another only one control point adjustment is needed. The temperature and pressure control points of the instruments are so connected that the proper differential always exists.

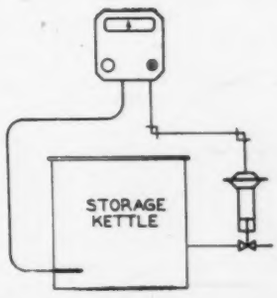
Ideal conditions are maintained in the cylinders without sacrificing slasher production. Precision control obtained permits cylinder pressures to be maintained at most efficient value without wasting steam in blowoffs through pop-valves. For full details ask your Taylor Field Engineer or write Taylor Instrument Companies, Rochester, N. Y., or Toronto, Canada. *Instruments for indicating, recording and controlling temperature, pressure, humidity, flow and liquid level.*

Taylor Instruments
MEAN
ACCURACY FIRST
IN HOME AND INDUSTRY

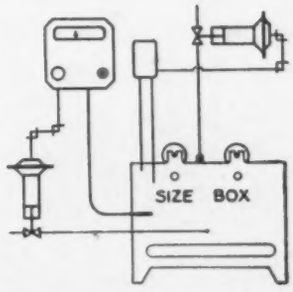
TAYLOR CYLINDER CONTROL + THESE CONTROLS = COMPLETE CONTROL



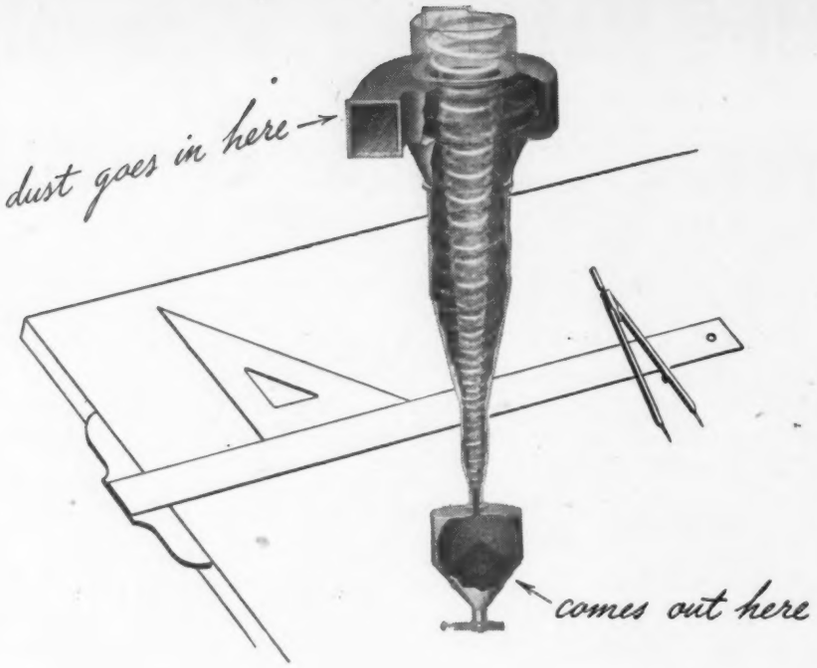
1. Taylor Cooking Kettle Control assures uniformity of every batch by exact repetition of ideal time-temperature schedule.



2. Taylor Storage Kettle Control maintains ideal holding temperature.



3. Taylor Size Box Control assures uniform deposit of size by maintaining both temperature and level in size box.



Man-Made Tornado

Take any industrial plant that has a nuisance problem. Apply an American Blower Dust Collector. Presto! Your problem is solved. The man-made tornado action in these collectors does just this, easily and effectively.

Material can be separated from air or gases, too, in industries where it is worth salvaging, with these time-proved American Blower products. These collectors have already proved their merit collecting grain dust, coal dust, ore roaster dust, cement dust, soap dust, and a long list of other materials from air.

Phone your nearest American Blower Branch for information on putting these collectors to work for you. Ask also about the complete line of American Blower Air Handling Equipment and be sure to investigate Gyrol Fluid Drive for the smooth transmission of power and stepless variable speed control.

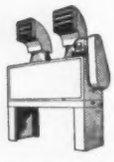
AMERICAN BLOWER

AMERICAN BLOWER

AMERICAN BLOWER CORP., DETROIT 32, MICH.

Division of American Radiator & Standard Sanitary corporation

4 Years of War-Stimulated Improvement—On Top of 61 Years of Engineering Development


Heating Equipment

Ventilating Equipment

Gyrol Fluid Drive

Industrial Fans

Air Conditioners

Special Features in men's coating

Fabrics

With Fine Knitting by

TORRINGTON NEEDLES

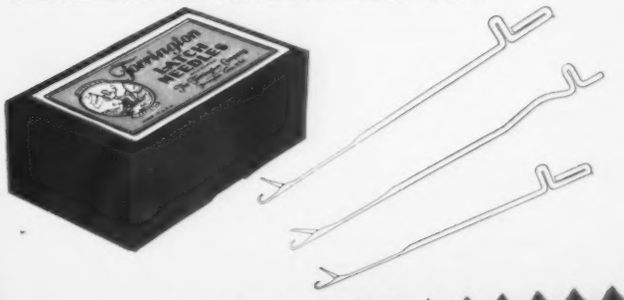
Knitted fabrics offer special advantages in topcoats and overcoats as many consumers have already discovered to their satisfaction. Light weight, warmth, comfort, durability, pattern variety—all these features may be combined in knitted overcoat fabrics to produce garments of lasting utility and distinction.

The quality of the knitting is especially important, for good appearance must be retained over long periods of wear. Depend on Torrington Needles—the precision-made needles—to help you achieve high standards in this as well as all other types of knitting.

TORRINGTON
Latch Needles

THE TORRINGTON COMPANY
Torrington, Conn., U. S. A. • Established 1866

Branches: New York • Philadelphia • Chicago • Greensboro, N. C.
Boston • St. Louis • Toronto, Canada • *Pacific Coast Representative:*
E. G. Paules, 1762 West Vernon Ave., Los Angeles 37, Calif.



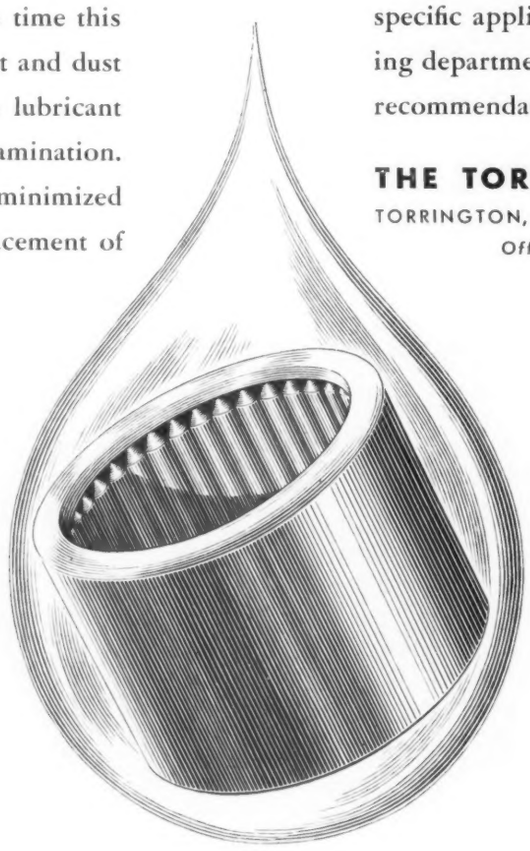
They make the lubricant last longer...

Yes, whatever the load, speed or service requirements of the installation, Torrington Needle Bearings help conserve lubricant... prolong its effective life.

That's because there is an extra margin of lubrication efficiency in Torrington Needle Bearings due to their basic design . . . *the turned-in lips of the hardened retaining shell which provide a natural reservoir for retention of the lubricant.* At the same time this same feature helps to exclude dirt and dust from vital bearing surfaces. The lubricant is kept clean and free from contamination. Consequently, bearing wear is minimized ...less frequent renewal or replacement of the lubricant is required . . . maintenance costs are substantially reduced.

If you are seeking an anti-friction bearing for an application where high capacity, small size and economical cost are important design considerations, Torrington Needle Bearings may be *your* answer! You'll find a wealth of pertinent data in our Catalog No. 32, available on request. If you have a specific application in mind, our engineering department will gladly give you specific recommendations.

THE TORRINGTON COMPANY
TORRINGTON, CONN. • SOUTH BEND 21, IND.
Offices in All Principal Cities



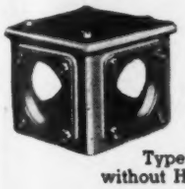
TORRINGTON NEEDLE BEARINGS

CROUSE-HINDS

Detachable Hub Plates for CONDULETS

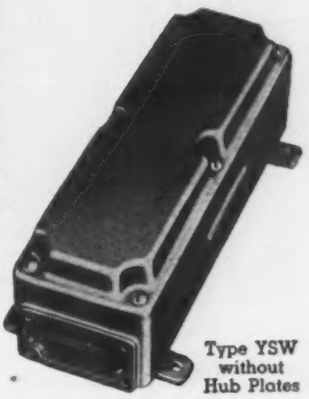
Many CONDULETS are designed to take demountable hub plates, thus extending their usefulness. When such CONDULETS are installed, it is easy to tap an electrical conduit system at any time and add branch circuits without interrupting service. Simply remove a blank plate and add a plate with the required number and size of hubs. In many cases demountable hub plates make the use of unions unnecessary. Crouse-Hinds hub plates can also be used as pipe flanges that have the advantage of an internal bushing. (See outline drawing below.)

The illustrations show a selection of detachable hub plates and a few of the CONDULETS that take such plates.



Type RSS without Hub Plates

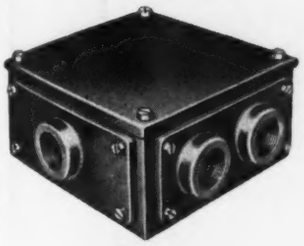
Type RSM without Hub Plates



Type YSW without Hub Plates

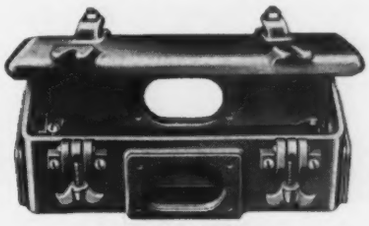
No. 13

of a series of advertisements which demonstrate that CROUSE-HINDS "complete line" means much more than just a range of sizes — there is a wide variety of highly specialized types in each classification.

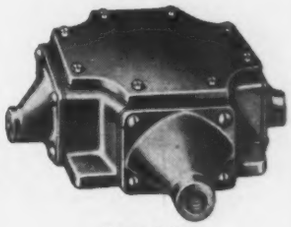


Type RS with Hub Plates

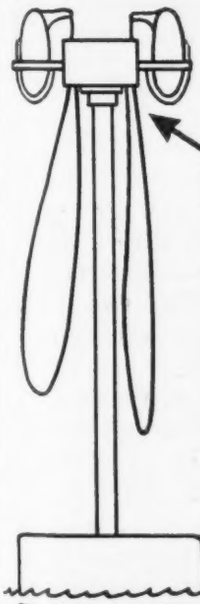
Type YYC with Hub Plates



Type YWX without Hub Plates

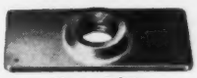


Type AJX with Hub Plates



This drawing shows the use of Crouse-Hinds hub plate RSMP 6 as a pipe flange for attaching speakers to electrical conduit at drive-in theaters. There are many similar problems in all industries.

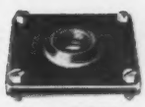
Type RSMP Two Hubs



Type RSP One Hub

Type YYAP One Hub 90° Back and Front

Type YYP Blank Plate



Type UGEB One Hub

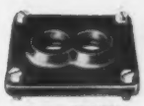
Type PED Pedestal Not Threaded

Type RSMP One Hub

Type RSP Two Hubs

Type YYLP One Hub 90° Left and Right

Type YYP One Hub Straight



Type UGEB Two Hubs

Type PED Pedestal Threaded Broken Away View

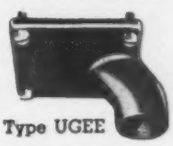
Type LOB Hub Plate Straight

Type RSP Three Hubs

Type YYSP Two Hubs 90° Left and Right

Type YYP Three Hubs Straight

Type UGEF



Type UGEE

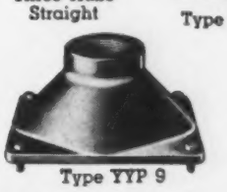
Type LOB Hub Plate Angle

Type LOB Hub Cover

Type GS Hub Cover

Type GSG Hub Plate

Type CUH Hub Plate for Joining Conduit to a Pole



Type YYP 9

A Nationwide Distribution Through Electrical Wholesalers

CROUSE-HINDS COMPANY

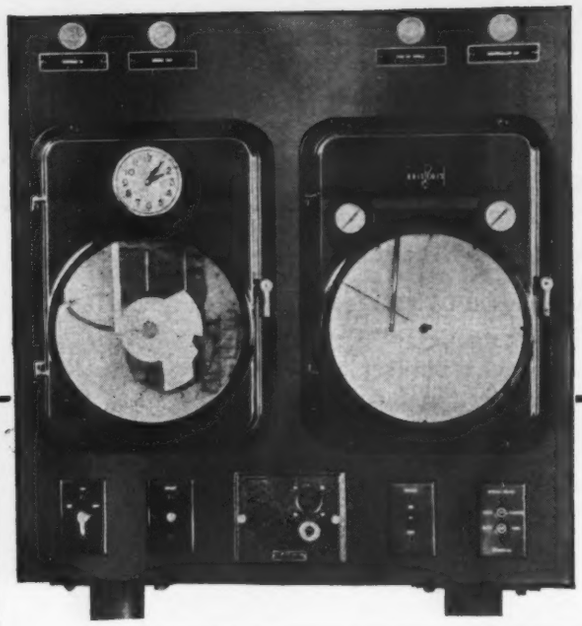
Syracuse 1, N. Y., U.S.A.

Offices: Birmingham — Boston — Buffalo — Chicago — Cincinnati — Cleveland — Dallas — Denver — Detroit — Houston — Kansas City — Los Angeles — Milwaukee — Minneapolis — New York Philadelphia — Pittsburgh — San Francisco — Seattle — St. Louis — Washington. *Resident Sales Engineers:* Albany — Atlanta — Charlotte — Indianapolis — New Orleans

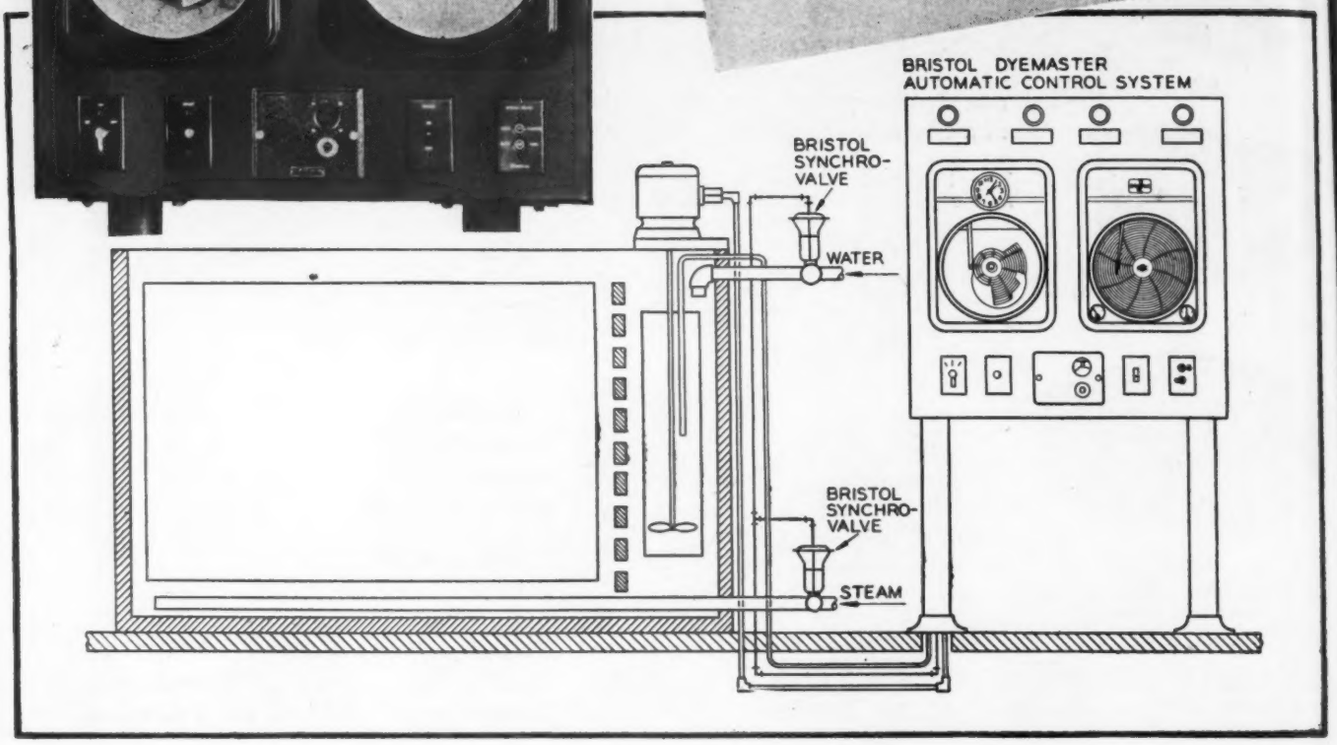
CROUSE-HINDS COMPANY OF CANADA, LTD., *Main Office and Plant:* TORONTO, ONT.

CONDULETS · TRAFFIC SIGNALS · AIRPORT LIGHTING · FLOODLIGHTS

When operating Hussong Vats, Bristol's DYEMASTER will also automatically reverse the circulation at the proper time.



IT DOES YOUR WORRYING FOR YOU!



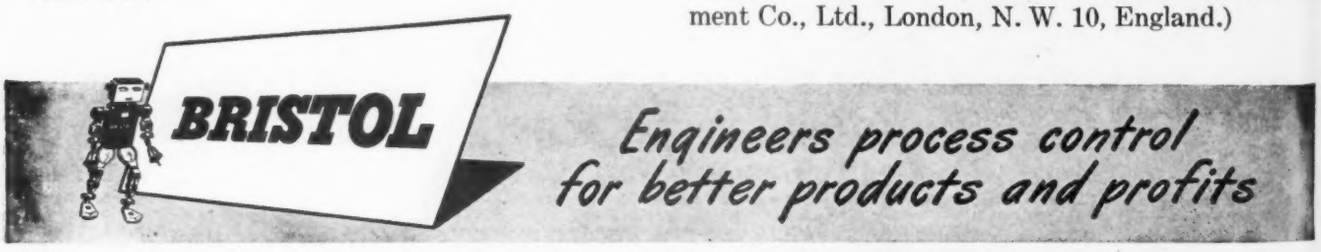
When your dyeing machines and dye vats are under the automatic control of the Bristol DYEMASTER, you can forget:

Temperature at which soap is added . . . duration of boil off period . . . time at which wetting agent is added . . . time at which dyestuff is added . . . temperature of liquor during dyeing cycle . . . rate of temperature change . . . duration of dyeing period . . . time at which salt is added . . . discharge of dye liquor to sewer . . . addition of rinse water . . . duration of rinse period. In Beam and Package Machines and Hussong Machines: the instant when circulation must be reversed . . . duration of circulation in each direction.

Once a correct procedure has been established, the DYEMASTER will see that it is followed faithfully in every succeeding batch — every shade run exactly alike . . . dyestuffs saved, due to elimination of add-dye cycles . . . steam and water saved . . . increased production, due to accurate timing of all steps and elimination of add-dye cycles.

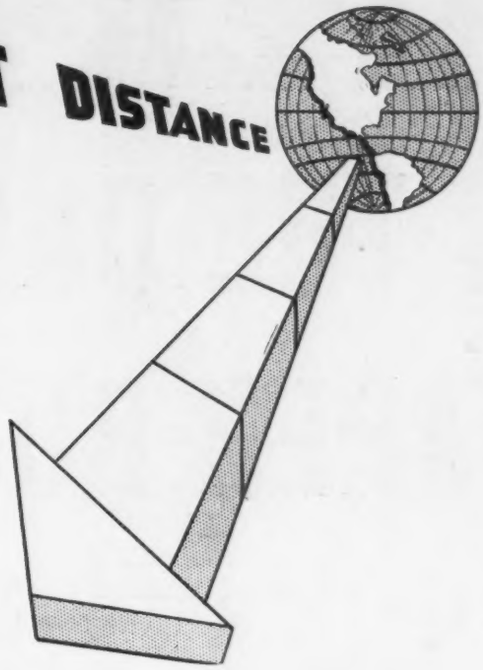
When the formula is to be changed, the complete control system can be revised accordingly, in a matter of minutes.

Write for free Data Sheet No. 27 on DYEMASTER. THE BRISTOL COMPANY, 157 Bristol Road, Waterbury 91, Conn. (The Bristol Co. of Canada, Ltd., Toronto, Ontario. Bristol's Instrument Co., Ltd., London, N. W. 10, England.)

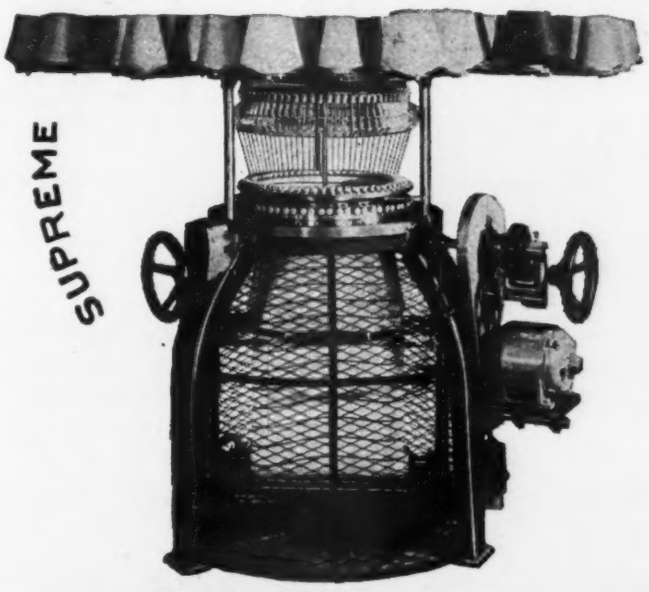


AUTOMATIC CONTROLLING AND RECORDING INSTRUMENTS

SHORTEST DISTANCE



JERSEY CIRCULAR MACHINES



Manufacturers all over the world are looking to SUPREME for the answer to economy, performance, and quality in the production of Jersey Fabric . . .

And the answer is the Model MJ Supreme Jersey Circular . . . the machine that represents more than thirty years of specialized experience in the knitting industry . . . the machine that has achieved a production rate of 100 yards of fabric an hour.

The high speed MJ Model is constructed in sizes 6" to 30", and boasts a great variety of horizontal stripes within its great range of feeds. (Model Illustrated, 64 feeds.)

Find out for yourself the amazing capabilities of Model MJ. Write now for the illustrated catalog. Or, better still, see the Model MJ in operation at a Supreme showroom or the factory.

SUPREME KMCo

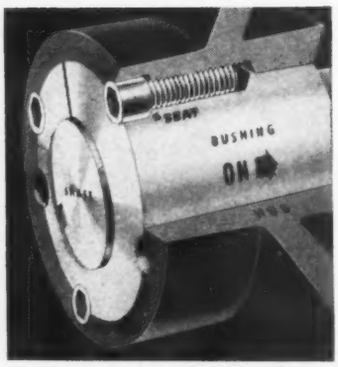
SUPREME

KNITTING MACHINE CO., inc.

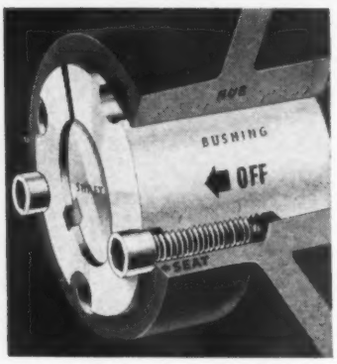
105 JOHNSON AVE., BROOKLYN 6, N.Y., U.S.A.

TAPER-LOCK BRAND

IS THE ONLY TAPER-BUSHED SHEAVE MADE IN ALL THESE SIZES



1. Tighten screw to install.



2. Tighten screw to remove.

THE TAPER-LOCK Sheave is available in Dual Duty sizes from 3 to 18 inch pitch diameter, 1 to 6 grooves inclusive; and in C and D sizes from 9 to 44 pitch diameter, 3 to 10 grooves inclusive. A total of 451 sizes!

For full details call the Dodge Transmissioneer, your local Dodge distributor. Look for his name under "Power Transmission Equipment" in your classified telephone book.

DODGE MANUFACTURING CORPORATION, MISHAWAKA, INDIANA

DODGE
MISHAWAKA

THE SYMBOL THAT CAME TO LIFE

The man who walks into your factory wearing this symbol is the living embodiment of a service which gives you the correct answers to your problems in efficient mechanical transmission of power. He is the Dodge *Transmissioneer*.

Copyright, 1946, Dodge Mfg. Corp.

NAME PLATES

FOR YOUR NAME PLATE REQUIREMENTS, WRITE OUR SUBSIDIARY, ETCHING COMPANY OF AMERICA, 1520 MONTANA STREET, CHICAGO 14, ILLINOIS

PEPPERELL FABRICS

a name chosen for prestige... uses

LAWRENCE CALFSKINS

the name leading mills choose

Pepperell Manufacturing Company, like many other top-ranking cotton mills, uses Lawrence Calfskins for spinning-frame aprons, to assure the finest in spinning results. More mills insist on Lawrence Calfskins than any other brand. Experience has taught them, first, that perfect drafting comes from the *natural* surface of calfskin... second, that Lawrence experience in product research, manufacture and detailed inspection results in uniform high quality.

Lawrence Calfskins for your aprons assure you the excellent performance and longer-lasting resilience that have always characterized the Lawrence brand. A. C. Lawrence Leather Company, Peabody, Mass., manufacturers of Lawrence Spinna Calf for roll coverings. Represented by H. H. Hersey, Greenville, S. C.

EVERY YEAR MORE PEOPLE DECIDE LEATHER IS BEST

THESE

SIX SENTRIES

Challenge Every New Development

ON EVERY C&K LOOM

DOES IT INCREASE
Speed of Operation?

DOES IT INCREASE
Ease of Operation?

DOES IT IMPROVE
Quality of Fabric?

DOES IT DECREASE
Cost of Maintenance?

DOES IT IMPROVE
Continuity of Operation?

DOES IT IMPROVE
Appearance and Utility?

These six challenges are levelled at every new idea for the improvement of C&K Looms. And if any idea can't meet at least one of these challenges, *then it's not a good idea*—either for us or for your own weave-room efficiency. So it is permanently filed in the wastebasket.

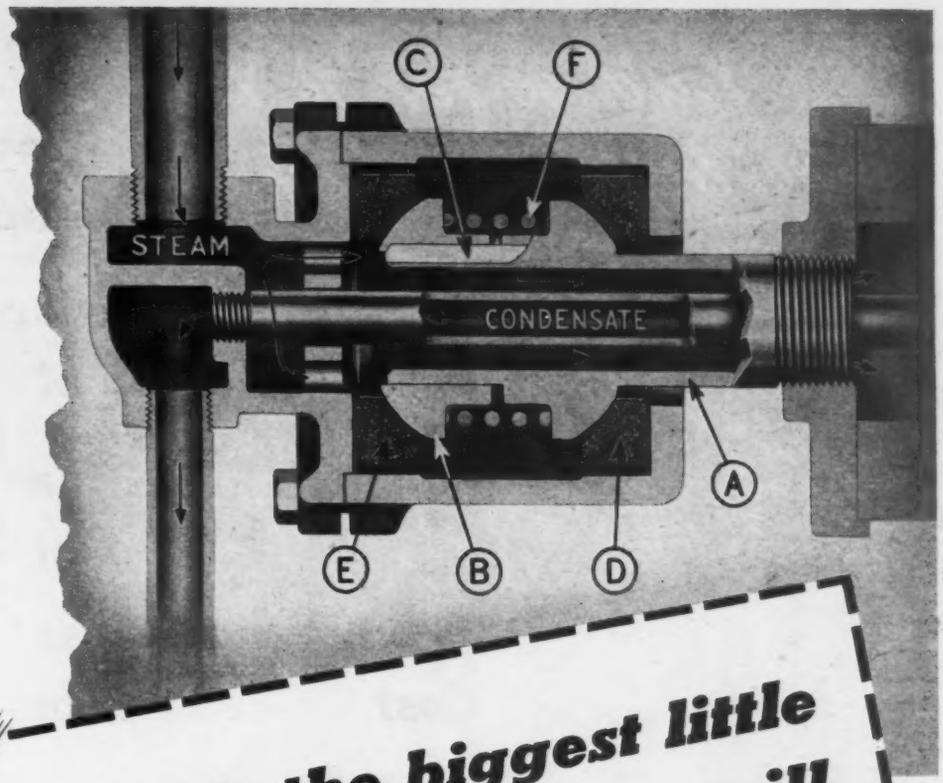
This searching test is being applied, now, to all new ideas as they are developed . . . ideas involving new materials, methods, and machines. For decades of hard work have taught us, long since, that newness alone has nothing to do with practical mechanics and economics.

That's why new improvements in C&K Looms won't come altogether, all wrapped up in one dazzling package. They'll come in due course, when they have proved able to stand up to this 6-point test . . . *which is the best protection you could have, both for your mill and your customers.* So plan to take C&K Looms as they come along with their carefully tested and proven features. Don't wait for a complete miracle which can never happen, while other mill men pass you by at the steady pace of progress.

Crompton & Knowles Loom Works

WORCESTER 1, MASSACHUSETTS, U. S. A.
PHILADELPHIA, PA. • CHARLOTTE, N. C. • ALLENTOWN, PA.
Crompton & Knowles Jacquard & Supply Co.
Pawtucket, R. I.

between Today's Knowledge . . .
and Tomorrow's Looms



Nipple (A) is connected to roll or drum. Sliding collar (B) is keyed to nipple at (C), but slides loosely over it so pressure can fill entire housing. This pressure becomes the sealing force, by pressing seal ring (D) tightly against nipple. Both seal ring and bearing ring (E), are of special carbon-graphite, which eliminates oiling and packing. Spring (F) is for initial seating only. Type B Joint illustrated; other types, sizes for all needs.

. . . . it's the biggest little trouble-saver in the mill

In terms of physical size alone, the Johnson Joint could hardly be called big machinery. But in its ability to save time and trouble, and promote plant efficiency, its stature approaches anything the industry has ever seen.

The Johnson Joint was designed to go after the old stuffing box and steam fit troubles in a business-like way, and it literally knocks the stuffing out of them. There's no packing of any kind. There's no oiling required, ever. There's no adjusting — the higher the pressure, the tighter the seal. There's little to fear from misalignment — with provision for both lateral and angular movement built right in. Note besides how neatly it provides for more efficient syphon drainage, through the same head that admits the steam.

In dollars and cents, what does all this add up to? Well . . . enough at least to pay the cost of switching over to Johnson Joints in just a short while. Enough certainly to make the Johnson Joint too big to overlook.

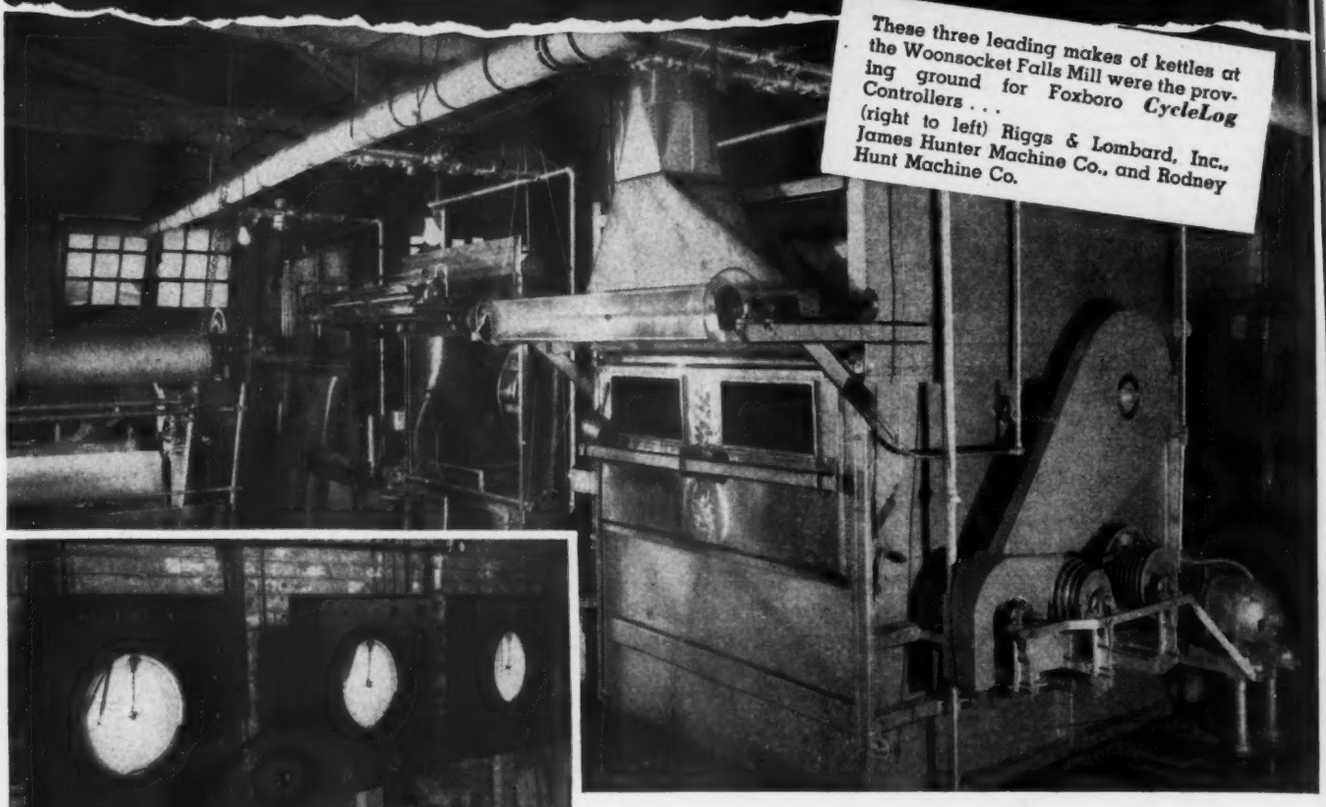
Write for literature and the name of your nearby Johnson representative.

JOHNSON
Rotary Pressure
JOINTS

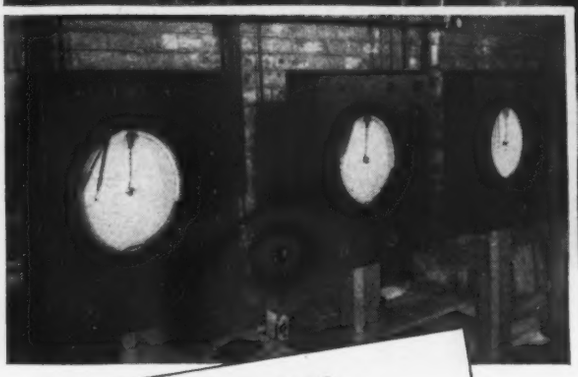
THE JOHNSON CORPORATION

814 WOOD STREET, THREE RIVERS, MICHIGAN

You'd go far to find a Better Proving Ground for Dye Kettle Control



These three leading makes of kettles at the Woonsocket Falls Mill were the proving ground for Foxboro *CycleLog* Controllers . . . (right to left) Riggs & Lombard, Inc., James Hunter Machine Co., and Rodney Hunt Machine Co.



FOXBORO
***CycleLog* CONTROL**

All you do is turn 4 knobs to desired settings. Then the instrument takes over, and automatically:

1. Raises temperature from the selected starting point to any desired dyeing temperature at specified rate-of-rise (in degrees per minute).
2. Holds dyeing temperature constant within 1°F.
3. Accurately times holding period.
4. Shuts off steam and lights signal lamp at end of holding period.

Unique principle of control wins re-orders for Foxboro

The Woonsocket Falls Mill, Inc. was first in the field to try Foxboro's *CycleLog* Controllers. But, it didn't stop at ordinary tests . . . it proved these unique rate-of-rise controllers on *three leading makes* of dye kettles. Based on outstanding results . . . three more were ordered within a year.

The Foxboro *CycleLog* Controller embodies all the features and advantages of standard Foxboro Temperature Controllers in addition to the unique rate-of-rise feature – achieved without the use of cams or extra instruments.

For precise color matching, you couldn't find a better, simpler instrument to operate and to maintain. You'll see what we mean – if you get all the facts about the Foxboro *CycleLog* Controller. Write **The Foxboro Company, 84 Neponset Ave., Foxboro, Mass., U. S. A.** Branches in principal cities.

FOXBORO
REG. U. S. PAT. OFF.

AUTOMATIC DYE-VAT CONTROL

Saran BY NATIONAL

A NEW CHAPTER IN THE HISTORY OF TEXTILES

Sturdy, colorful fabrics, in a variety of weaves and textures give added sales appeal to upholstery fabrics.

Luggage covered with SARAN resists scuffing and scraping . . keeps its smart appearance thru years of service.

Shoes and handbags that can be cleaned with a damp cloth, have been fashioned of SARAN by leading designers.

Auto seat covers woven of SARAN resist hard usage, won't sag or bulge . . defy dirt and grease!

THERE'S solid comfort in that chair, but there's more than meets the eye in the SARAN fabric that covers it.

Extruded by National as a tough, flexible monofilament, SARAN is being woven into wear-resistant fabrics of breath-taking beauty. SARAN won't absorb dirt and grease. It is not affected by acids, alcohol and most other chemicals.

Wide and ever-growing markets are being created for numerous products with the aid of this "magic thread".

▶ National's extensive technical facilities are available for the study of your product. Write for specific information and samples of SARAN BY NATIONAL.

TRADE MARK REG. U.S. PAT. OFF.

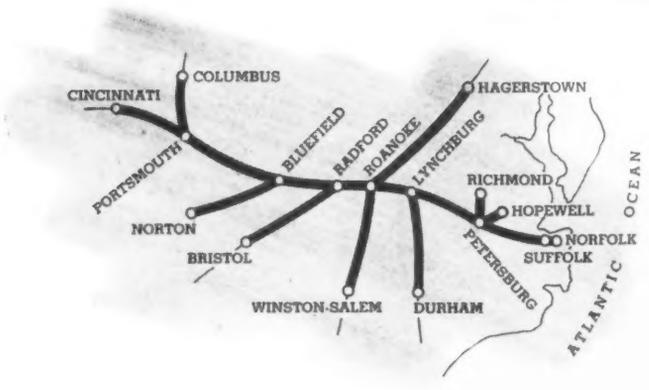
The NATIONAL Plastic Products Company

ODENTON • MARYLAND

IT LOOKS GOOD ON THE BOARD

Give it the Right Location

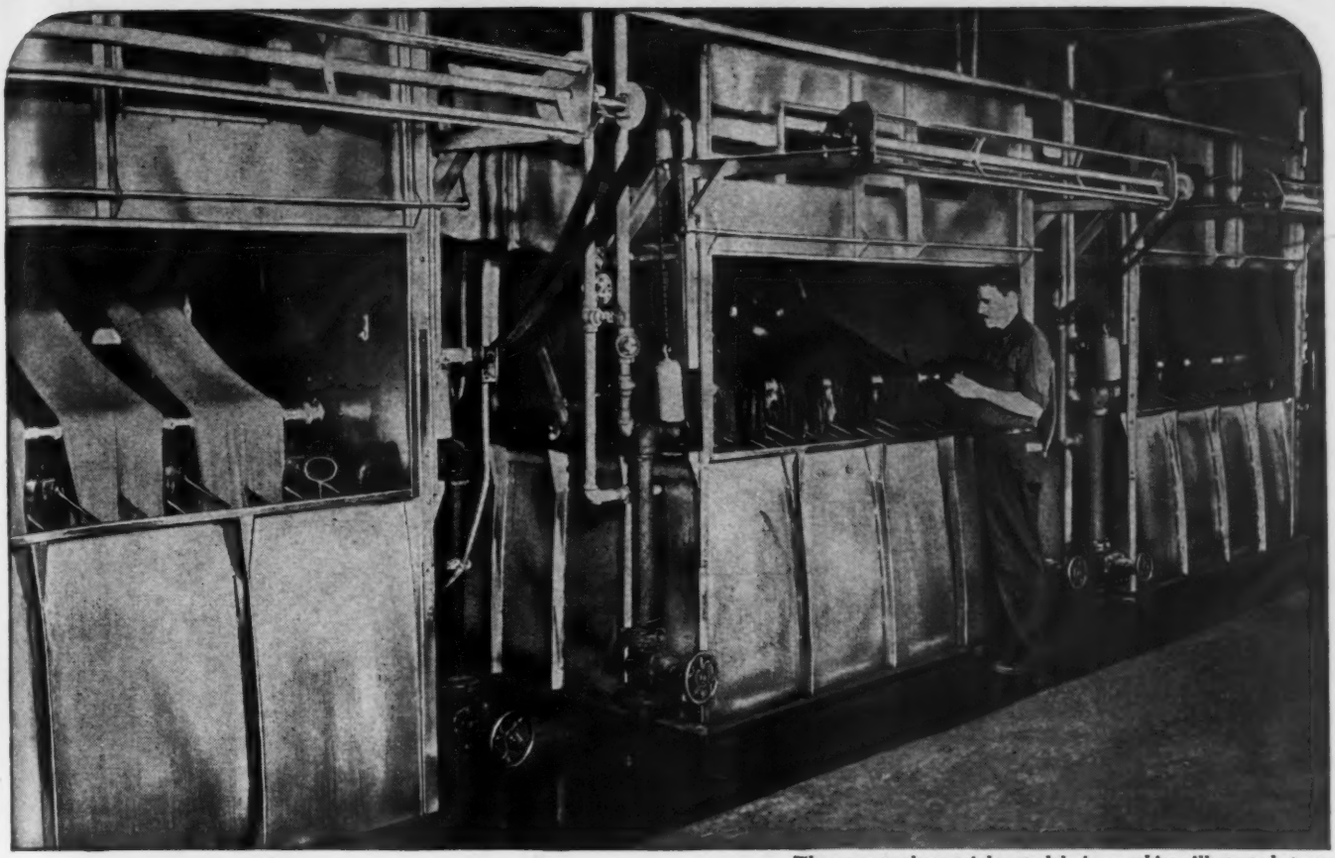
Locate your textile plant where you will have abundant raw materials, a wealth of natural resources, plenty of intelligent native labor, a friendly tax policy, a temperate climate and excellent living conditions . . . Build your plant in Norfolk and Western territory where you will find all these assets plus ready access over N. & W. rails to America's leading markets, and through the Port of Norfolk, to the markets of the world.



Regardless of how good a plant may look on the board, it must have the right location to operate efficiently and grow. The railway's Industrial and Agricultural Department at Roanoke, Virginia, has complete information on good textile plant sites in Norfolk and Western territory. Write or phone for this confidential data today.

Norfolk and Western
RAILWAY

FOR BETTER PLANT LOCATIONS



These easy-to-clean stainless steel dyeing machines illustrate but one of many applications for lustrous Republic ENDURO in processing industries. Others include: mixers, condensers, evaporators, filters, valves, drums and tubing.

Enduro Pays in many ways

Improved Employee Relations
Easy to Clean
Non-Contaminating
Strong—Long Lasting
Resistant to Rust and Corrosion
Resistant to Heat
Easy to Fabricate
Universal Acceptance
Low Ultimate Cost

Lustrous, bright, sanitary appearance—plus factor of Republic ENDURO Stainless Steel—pays prompt dividends in improved employee relations.

ENDURO is clean—and remarkably easy to clean. It makes work easier. Employees take pride in keeping it spotless. They find new incentive in the bright, cheerful atmosphere created by gleaming ENDURO equipment. And its smooth, shiny surface never wears out because ENDURO is solid stainless steel all the way through.

There are many other reasons, too, why it will pay you to specify ENDURO Stainless Steel—discussed in detail in Republic's new illustrated booklet No. 444. *Write for your copy today.*

REPUBLIC STEEL CORPORATION
Alloy Steel Division • Massillon, Ohio
GENERAL OFFICES: CLEVELAND 1, OHIO
Export Department: Chrysler Building, New York 17, New York

Republic
ENDURO STAINLESS STEEL
Reg. U. S. Pat. Off.

Other Republic Products include Carbon and Alloy Steels—Pipe, Sheets, Strip, Plates, Bars, Wire, Pig Iron, Bolts and Nuts, Tubing

V-Belt
In Sheave
Clearly, it's the sides of a V-Belt that do all the gripping on the pulley and get all the wear against the sheave-groove wall. That's why longer life for the sides means longer life for the belt!
THE
CONCAVE SIDE
A
GATES
PATENT

The SIDEWALL of Your V-Belt does MORE Work NOW than ever before!

--that's why the CONCAVE SIDE has become Even MORE IMPORTANT!

The moment you think about it you realize, of course, that the *sidewall* is the part of a V-Belt that really gets the *wear*.

It's the sidewall that has to grip the pulley. It has to pick up all the power from the driver pulley, transmit that power to the tension member and then deliver to the driven pulley all the power that pulley ever receives.

That is the perfectly natural reason why you have always noticed that the sidewall of the *ordinary* V-Belt is the part that wears out first. Clearly, anything that lengthens the life of the sidewall will lengthen the life of the belt.

The simple diagrams on the right show clearly why the ordinary, *straight-sided* V-Belt gets excessive wear along the *middle* of the *sides*. They show also why the Patented Concave Side *greatly reduces* sidewall wear in Gates Vulco Ropes. That is the simple reason why your Gates Vulco Ropes are giving you so much longer service than any straight-sided V-Belts can possibly give.

Straight Sided V-Belt

How Straight Sided V-Belt Bulges When Bending Around Its Pulley

You can actually feel the bulging of a straight-sided V-Belt by holding the sides between your finger and thumb and then bending the belt. Naturally, this bulging produces excessive wear along the middle of the sidewall as indicated by arrows.

Gates V-Belt with Patented Concave Sidewall

Showing How Concave Side of Gates V-Belt Straightens to Make Perfect Fit in Sheave Groove When Belt Is Bending Over Pulley

No Bulging against the sides of the sheave groove means that sidewall wear is evenly distributed over the full width of the sidewall—and that means much longer life for the belt!

4610

Gates

THE MARK OF SPECIALIZED RESEARCH

Stronger Tension Members in Today's Belts Put Even GREATER LOAD on SIDEWALLS!

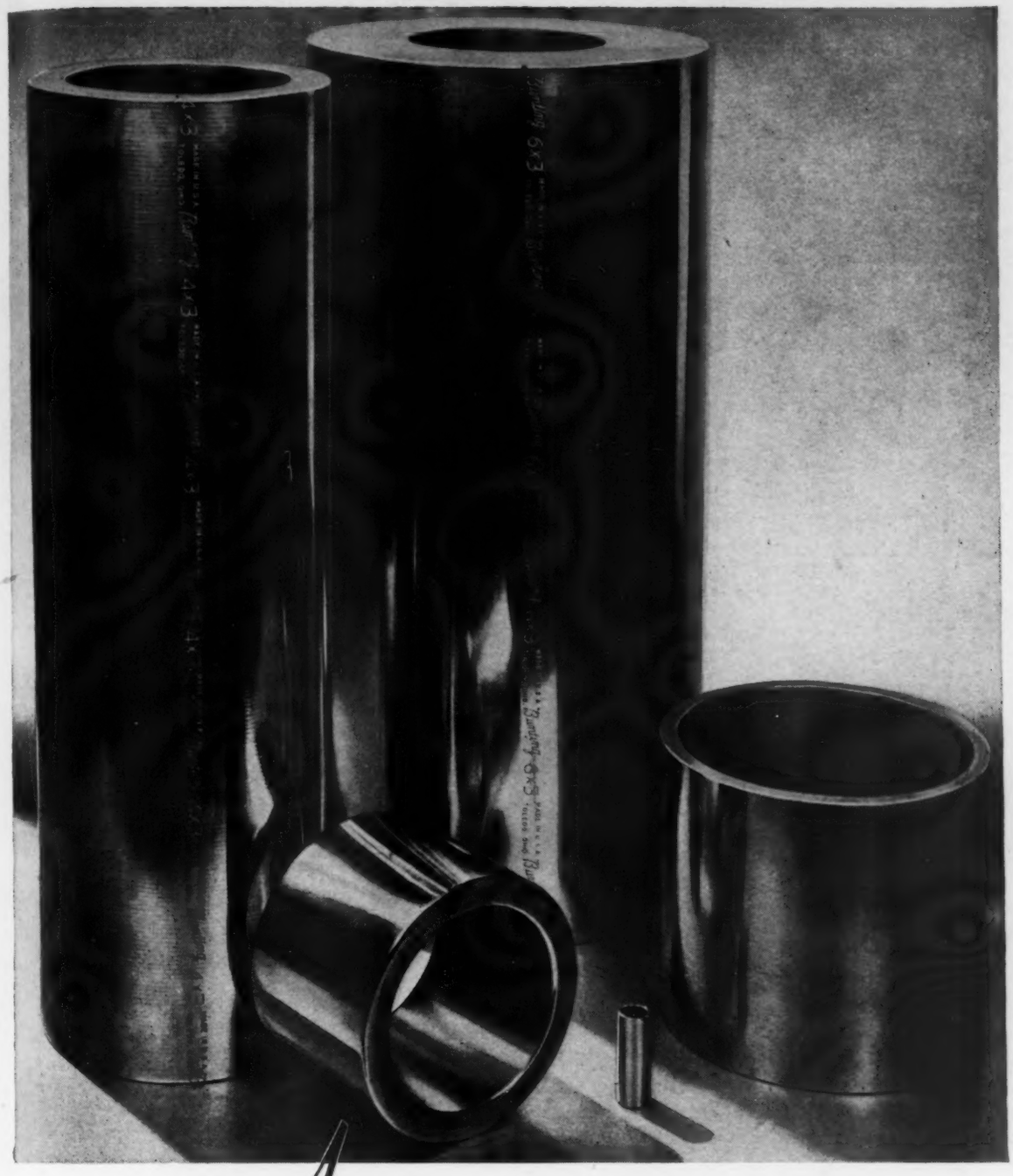
Now that Gates *Specialized* Research has resulted in V-Belts having much stronger tension members—tension members of Rayon Cords and Flexible Steel Cables, among others—the sidewall of the belt is often called upon to transmit to the pulley much heavier loads. Naturally, with heavier loading on the sidewall the life-prolonging Concave Side is more important today than ever before!

THE GATES RUBBER COMPANY

DENVER, U. S. A. **World's Largest Makers of V-Belts**

GATES VULCO ROPE DRIVES

Engineering Offices and Jobber Stocks **IN ALL INDUSTRIAL CENTERS** of the U. S. and 71 Foreign Countries

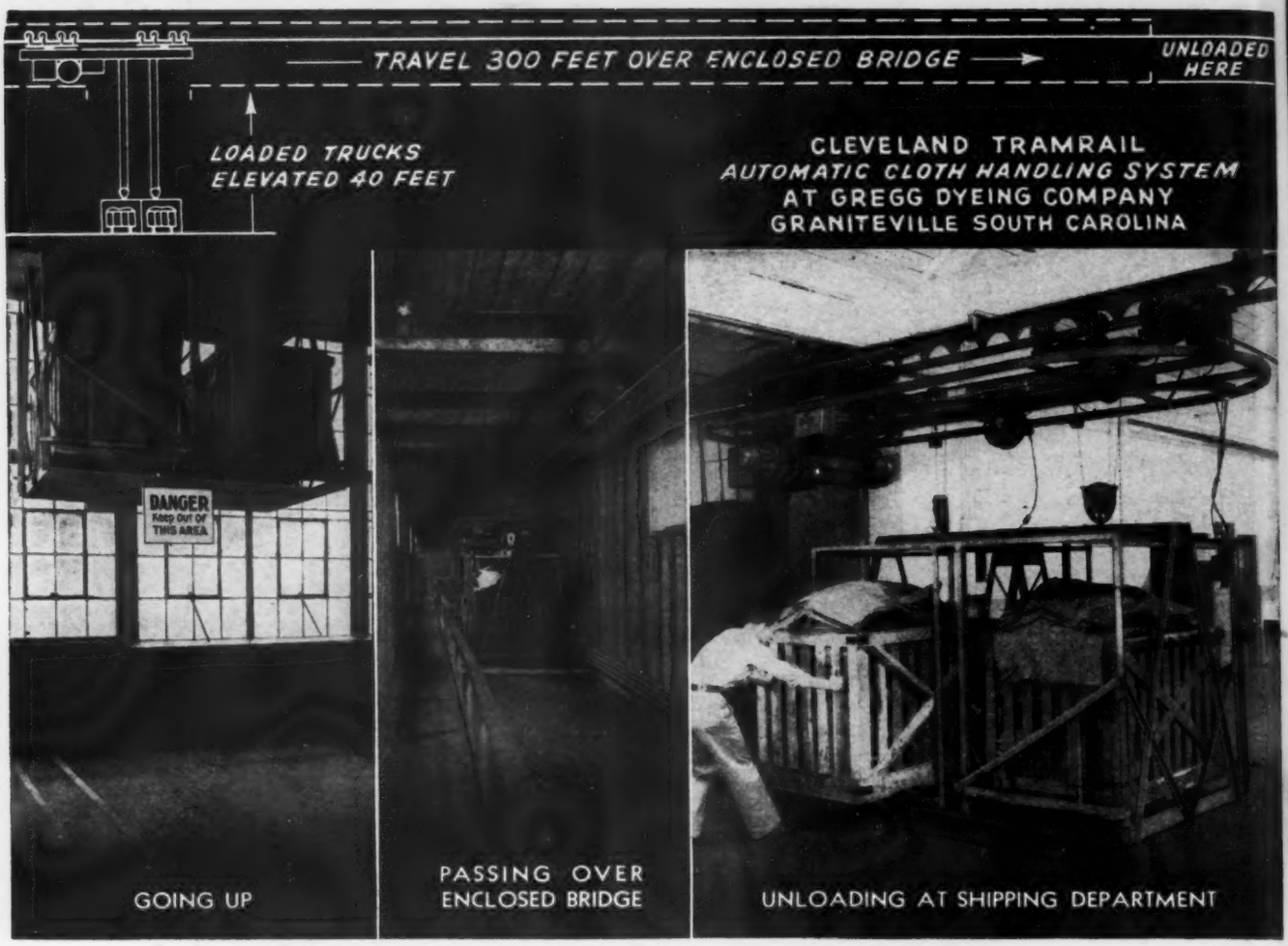


Availability, today, is more important than ever. The Bunting Stock-carrying Distributor offers availability. He can deliver either from his own stock or from ours. He can deliver *now*, practically every listed catalog size. Try him. The Bunting Brass & Bronze Co., Toledo 9, Ohio. Branches in principal cities.

Bunting

49

BRONZE BEARINGS ☆ BUSHINGS ☆ PRECISION BRONZE BARS



6,000 YARDS OF CLOTH PER TRIP...

HANDLED AUTOMATICALLY AT GREGG DYEING COMPANY

Trucks loaded with sanforized cloth from the finishing machines are elevated 40 feet and conveyed approximately 300 feet to the shipping department on a Cleveland Tramrail automatic dispatch system at the Gregg Dyeing Company, Graniteville, South Carolina.

Two trucks with 3,000 yards each are delivered per trip. They are unloaded and empty trucks returned. A complete cycle is made in seven minutes. The system is in operation 24 hours a day, six days a week. More than 300,000 yards are handled daily.

The system is controlled by push buttons. Depressing the "raise" button on the wall starts the Tramrail rack on its way. After it has been elevated to the high position, the carrier begins its travel over enclosed bridge especially constructed between the buildings. It stops automatically at the receiving end. When the loaded trucks have been removed and empty ones taken on, a button on the carrier is pressed and it is returned to the starting point. Unless the rack gates are closed the system will not operate.

This automatic system has made possible the efficient handling of cloth between remote points at extremely low cost.

GET THIS BOOK!

BOOKLET No. 2008. Packed with valuable information. Profusely illustrated. Write for free copy.

CLEVELAND TRAMRAIL DIVISION
THE CLEVELAND CRANE & ENGINEERING CO.
1185 EAST 283RD ST. WICKLIFFE, OHIO.

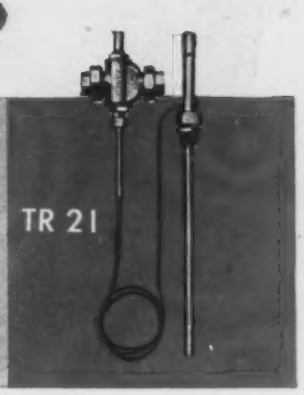
CLEVELAND TRAMRAIL

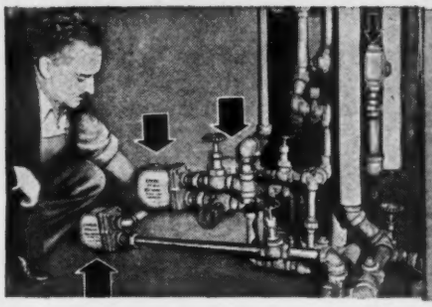
OVERHEAD MATERIALS HANDLING EQUIPMENT

HOW DOES SARCO SAVE IN THE TEXTILE INDUSTRY?

Twist Setting

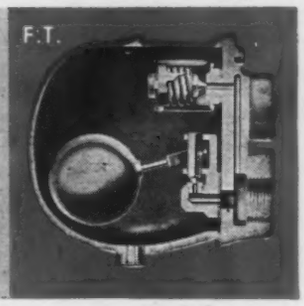
The production on treating yarns in ovens was materially increased by Sarco TR-21 temperature controls. Quality uniform—rejects reduced. Bulletin No. 600.

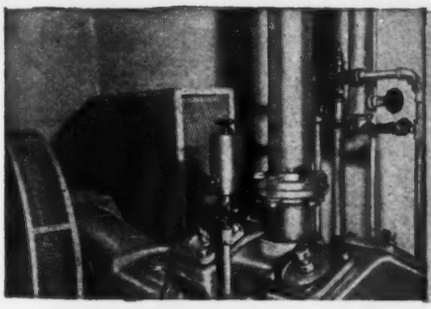




Agers

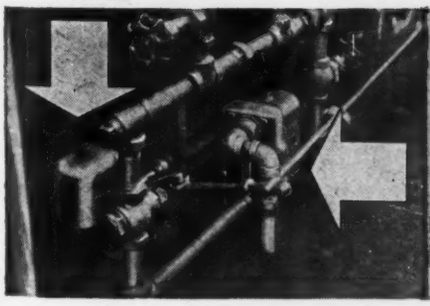
Three Sarco float-thermostatic steam traps and one No. 9 thermostatic trap stabilized the operation of this ager in a textile plant. This plant is All Sarco. Bulletin 450.





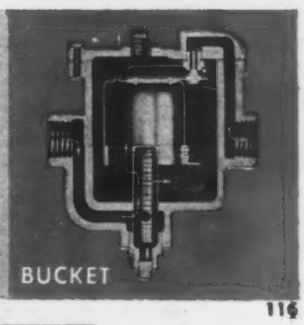
Compressor Cooling

The Sarco TR-40 cooling control reduces water consumption, makes compressors more effective. Other types for Diesels. Bulletin No. 700.



Finishing

The problem was to increase production. Sarco bucket steam traps did it by working harder, faster, and longer. Bulletin 350.



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SARCO SAVES STEAM

Represented in Principal Cities

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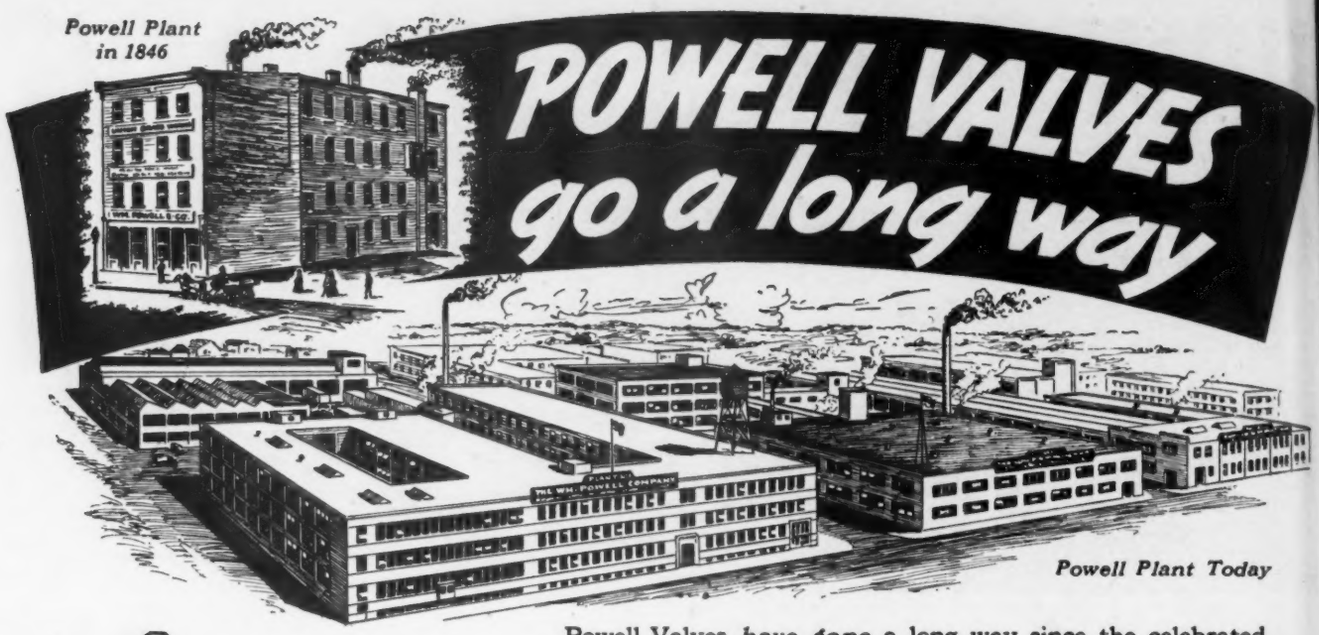
Powell Plant in 1846

POWELL VALVES go a long way



Powell Plant Today

Powell Valves *have gone* a long way since the celebrated Powell "Star" Regrinding Globe Valve was patented in 1865.

Today, with a notably complete line of valves, which includes every required type, size and design—in bronze, iron, steel and many corrosion-resistant metals and special alloys—Powell Valves *are going* a long way in meeting the flow control requirements of modern industry.

Above all, Powell Valves *go* a long way in actual service, because each valve is designed to give maximum performance under the actual operating conditions it will encounter.

Catalogs on request. Kindly state whether you are chiefly interested in Bronze, Iron, Cast Steel or Corrosion-Resistant Valves.

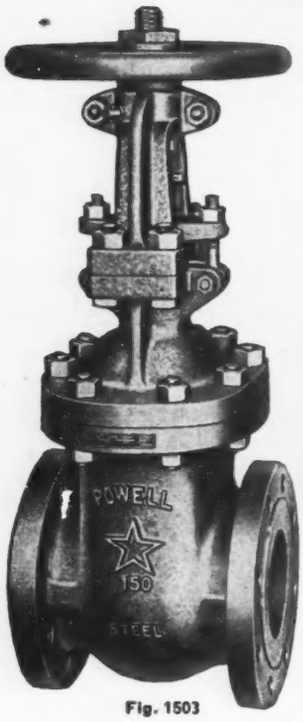


Fig. 1503

Class 150-pound Cast Steel Gate Valve. Has flanged ends, outside screw rising stem, bolted flanged yoke and taper wedge solid disc.

Powell Cast Steel Valves of all types are available in pressure classes from 150 to 2500 pounds, inclusive.

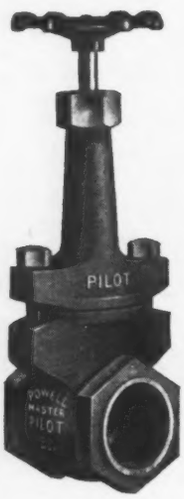


Fig. 1460

Iron Body Bronze Mounted "Master Pilot" Gate Valve. Screwed ends, rising stem, bolted flanged bonnet and taper wedge solid disc. Also available in All Iron.

200-pound Bronze Gate Valve with screwed ends, inside screw rising stem, union bonnet, renewable, wear-resisting "Powellium" nickel-bronze disc.

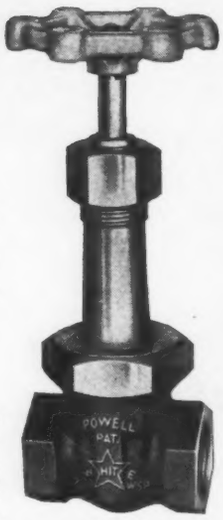


Fig. 375

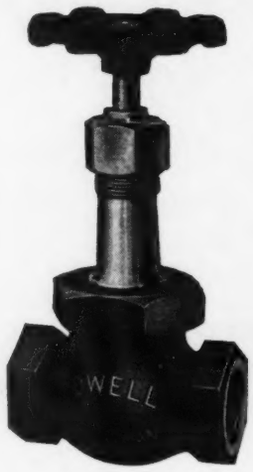


Fig. 190

150-pound Iron Body Bronze Mounted "Irenew" Globe Valve. Has screwed ends, union bonnet and regrindable, renewable, wear-resisting "Powellium" seat and disc. Also available in All Iron for process lines.

Fig. 150

150-pound Bronze Globe Valve. Screwed ends and union bonnet. Regularly furnished with renewable vulcanized composition disc but special discs can be supplied for a number of different services.

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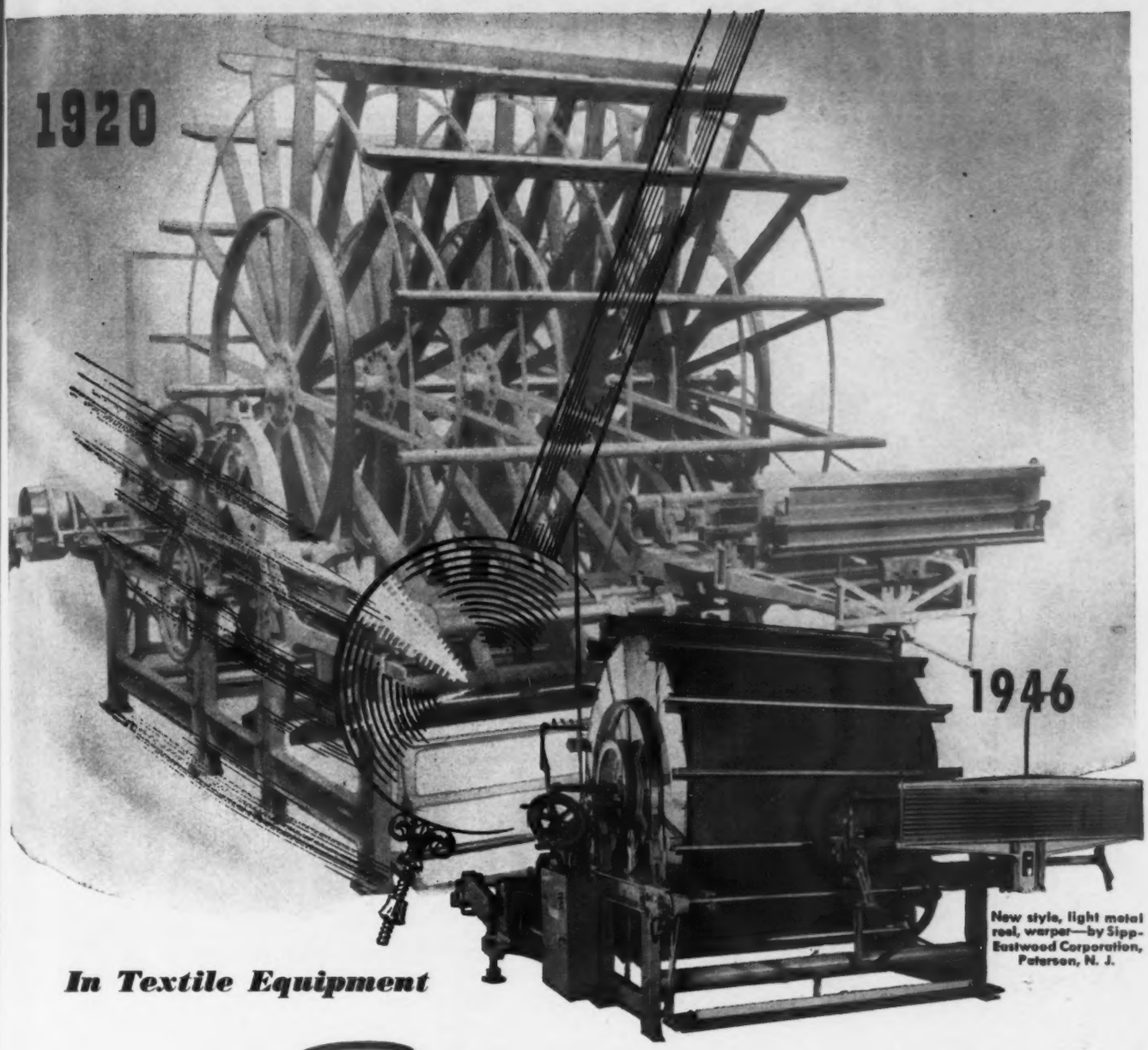

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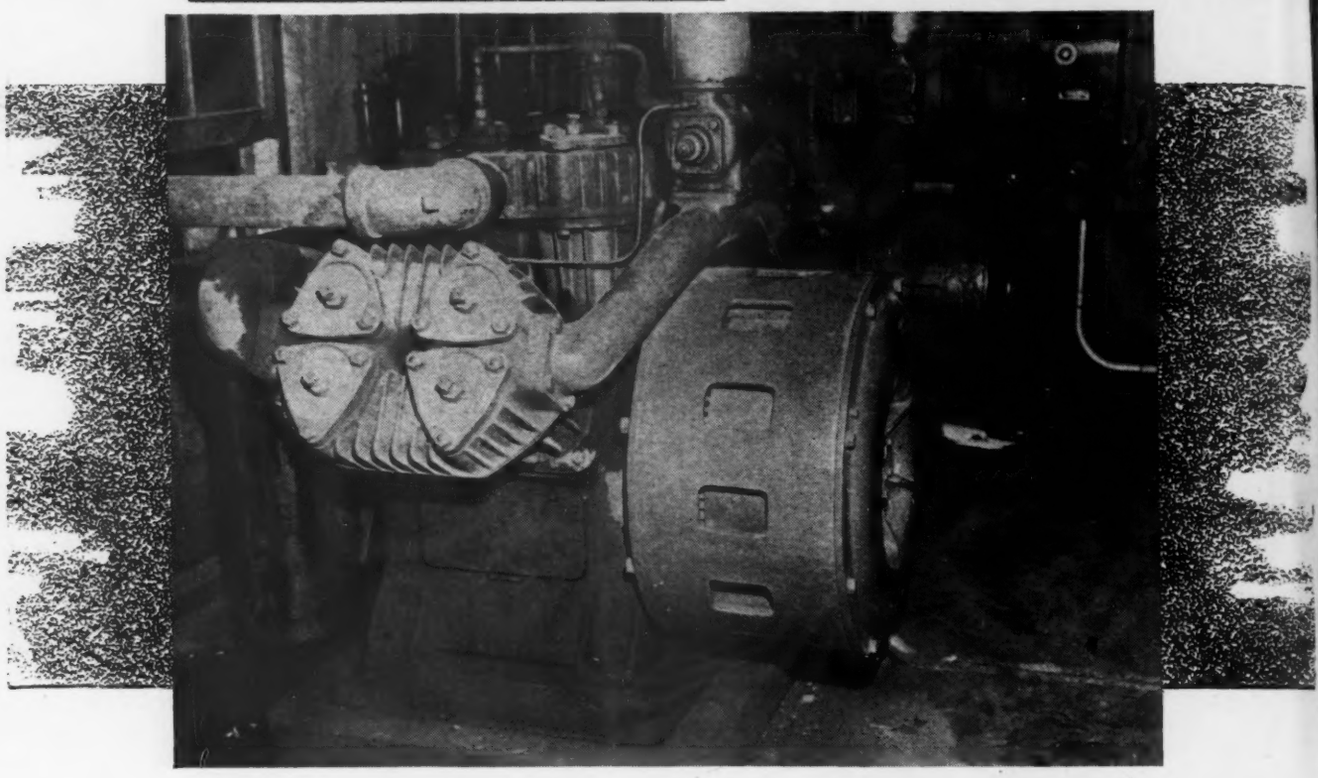

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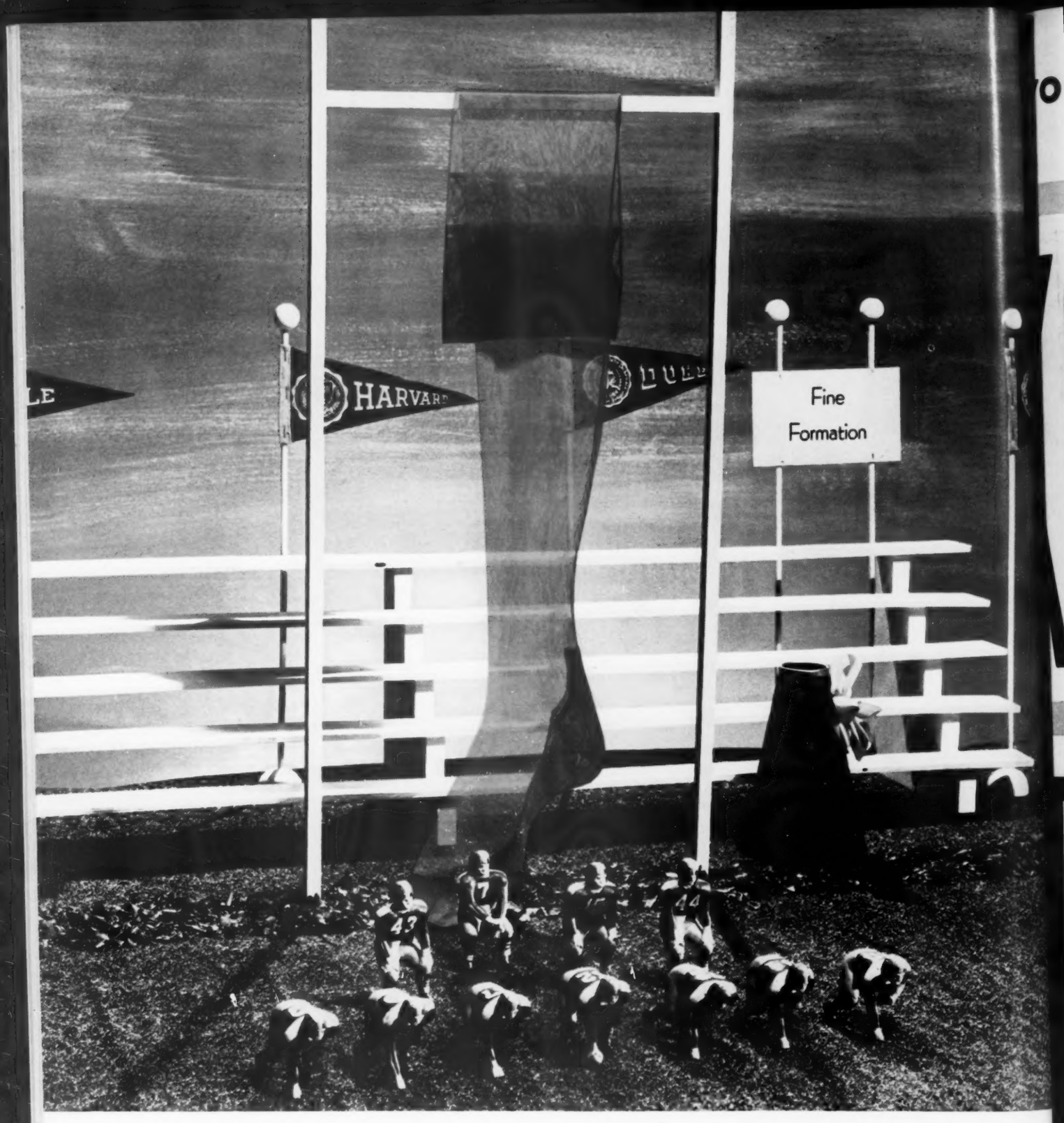

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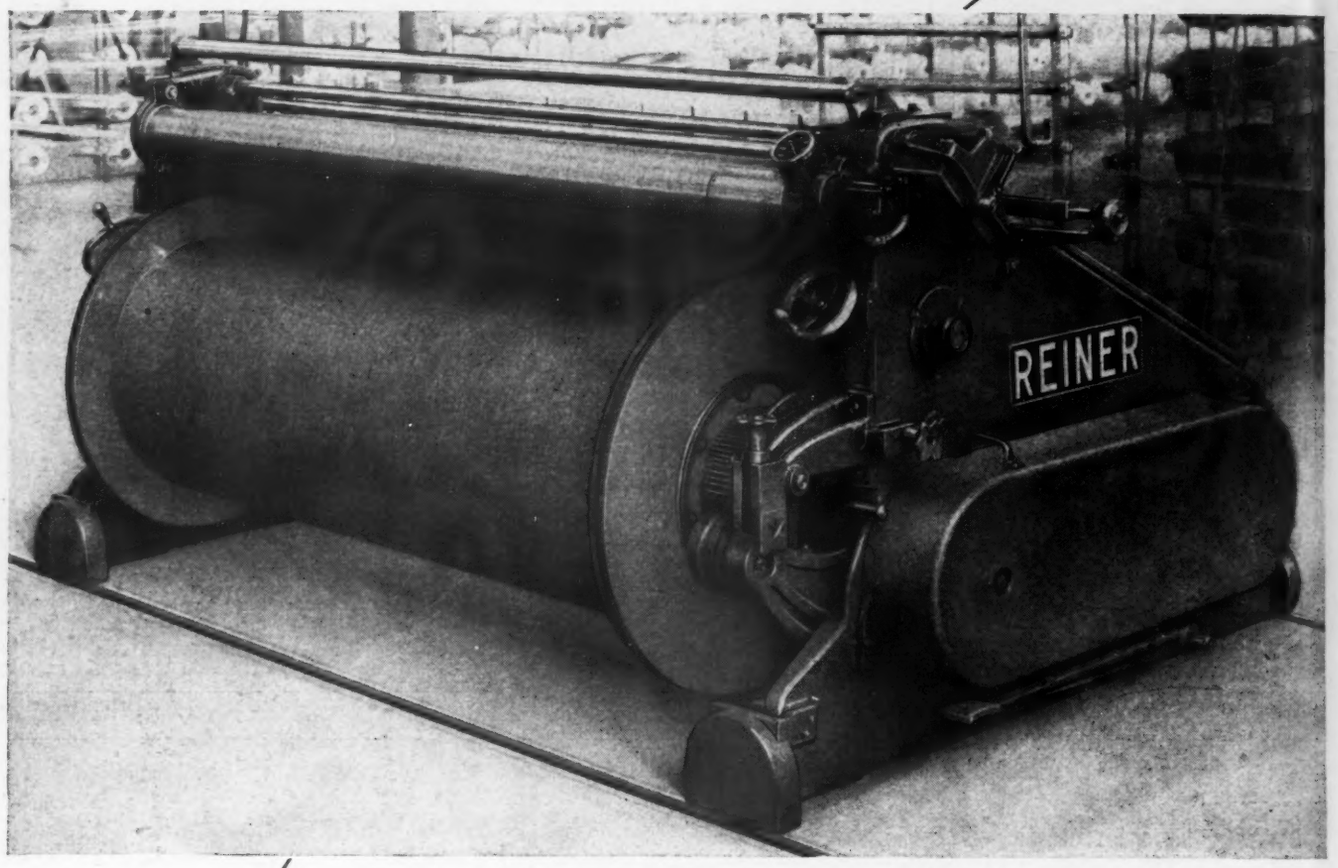
or further information about Koda and Teca, consult A. M. Tenney Associates, Inc., 10 East 40th Street, New York 16, ales Representatives for Tennessee Eastman Corporation (Subsidiary of the Eastman Kodak Company), Kingsport, Tennessee.

Where Machine Operation



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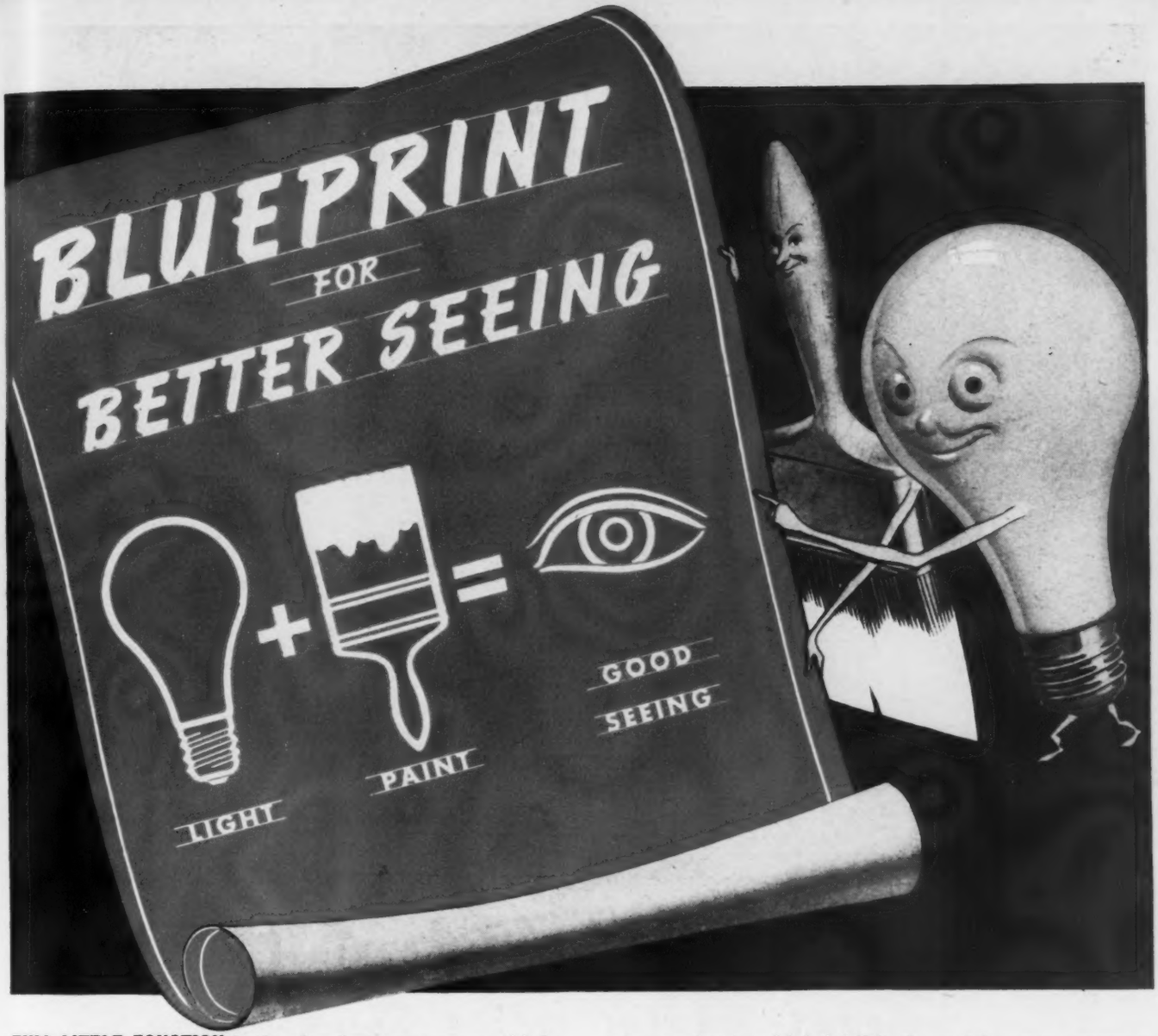

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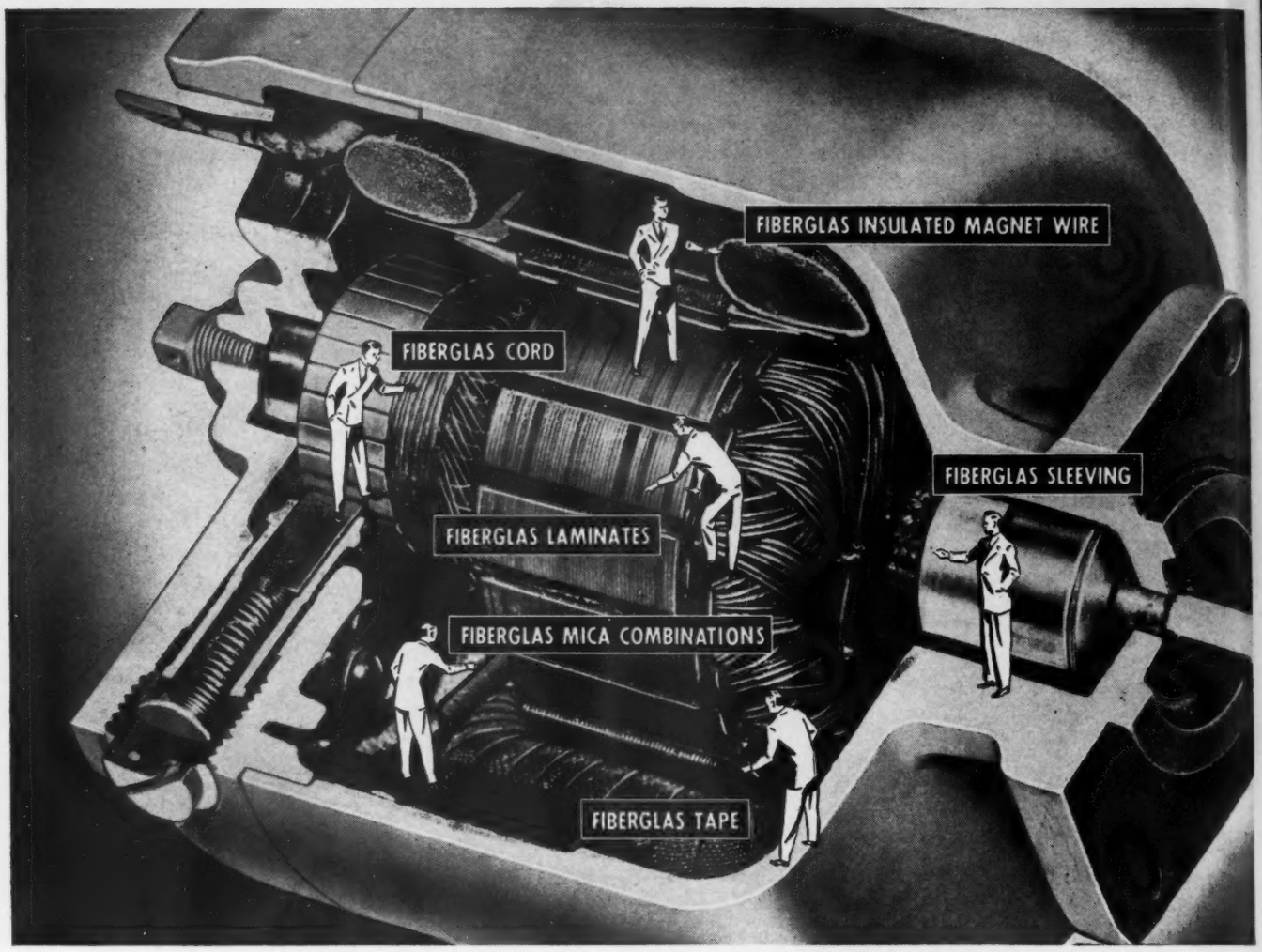

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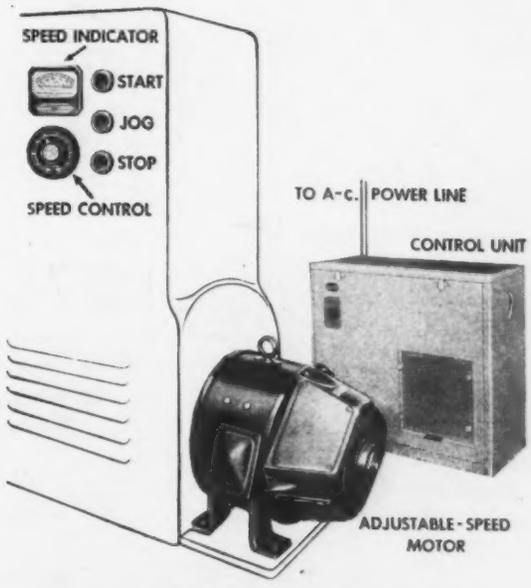

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A FREE ECONOMY IS WORTH FIGHTING FOR

BUSINESS must take the initiative if the price decontrol machinery, set up by Congress, is to be effective. The present price control law is far more than a set of instructions to the administrators of OPA; it is a challenge to business to be aggressive in speeding decontrol decisions and in persuading the Price Decontrol Board to adopt a strong stand for return to a free economy.

Thus far business has not met this challenge. *Two months after the passage of the new price law not a single application for decontrol of a major product had been filed by an industry advisory committee.* This is due in part to the red tape controlling such applications. Nonetheless, a continuation of such inactivity on the part of business can well result in perpetuating price control far beyond the time either the present law or sensible economic policy require.

It was the clear intent of Congress to hasten our return to a free economy. In the legislation continuing the general control of prices, Congress formally declared its purpose to have it "terminated as rapidly as possible."

To accomplish this, the House originally approved a formula which would have made decontrol mandatory when production had attained a prescribed level. The automatic decontrol provision was dropped before the bill was finally passed, partly because of the uncertain effects of strikes on production. But Congress did not mean to return the timing and extent of decontrol to the administrative discretion of OPA.

On the contrary, to assure having price control "terminated as rapidly as possible," Congress created a Price Decontrol Board and gave it power to overrule OPA when the board finds price control should be removed. Moreover, it gave to industry the right and the responsibility to seek decontrol. Also, in a further effort to speed up the decontrol process, it placed narrow limits on the time allowed for board decisions.

Congress had compelling economic reasons for doing its legislative best to speed up decontrol.

1. It is by all odds the best way to eliminate the bottlenecks in production and the black markets which have plagued the country since V-J Day.

> Rigid price ceilings promote shortages of badly needed commodities by discouraging their production. Such shortages both upset the flow of production and promote black markets. At present a considerable part of American industry is stymied by shortage of critical parts and materials. Price control is much to blame.

2. There must be flexibility of prices if a round of new wage adjustments, which may be forced on industry early in 1947, is to be negotiated without grave risks of seriously curtailing production.

> When, under the leadership of the national administration, the first post V-J Day round of wage adjustments was made, price ceilings were held rigid while wages were boosted. The result was a series of price-wage squeezes which upset production. They would have been disastrous if we had not been in a sellers' market, created by a tremendous accumulation of wartime shortages. In 1947, however, many industries will be in a buyers' market. It must be possible, therefore, to have wage increases reflected promptly in price adjustments if we are to avoid a repetition of the costly post V-J Day round of strikes, which often had price control as the key issue.

3. Rapid decontrol is necessary to maintain a high level of employment and production.

> Almost five years of price control inevitably twisted the factors of production and distribution far out of the equilibrium which would prevail in a free economy to which it is the clear purpose of the nation to return. Unless the return to a free economy is facilitated by a speedy and orderly decontrol, the jolt of an abrupt return to competition can be expected to upset employment and production seriously.

It's Up To Business

To encourage speed and boldness in decontrol, Congress provided for the reimposition of control over any prices which, after being released, might

get out of hand. The dangers of this sort are chronically exaggerated. During the 25-day period in July when there was no price control the Civilian Production Administration found that "manufacturers of finished industrial and consumer products have generally exhibited commendable restraint in increasing prices no more than increased costs."

All of this endeavor to speed up decontrol and expand its scope is likely to be futile, however, unless business furnishes the driving power for the machinery Congress provided. OPA certainly will not do it. Neither can the Decontrol Board be expected to go out and drum up cases.

The necessity for vigorous action by business in pressing for decontrol is increased by the fact that the general legislative standards to guide decisions by the Decontrol Board are vague. They must be clarified and sharpened by decisions in specific cases.

The main principle to guide the decontrol of non-agricultural products is that price ceilings shall be removed when supply is in approximate balance with demand. But what precisely does that mean? The meaning will become clear only through Decontrol Board decisions.

The same is true of the principle which makes automatic decontrol of a non-agricultural commodity contingent on whether or not it "is important to business costs or living costs." Business must press cases which will give specific meaning to those vague terms if decontrol is to get on apace.

Cards Are Stacked

At present the government has the cards pretty well stacked against rapid decontrol.

First, the key members of the staff of the Price Decontrol Board are holdovers from the Bowles regime which emphasized the importance of carrying on price control rather than speed in getting rid of it.

Second, in exercising his authority to prescribe regulations to govern petitions for decontrol, the OPA administrator has required excessively complicated statistical and economic data. Manufacturers who are sure they can convince any fair-minded board of the desirability of decontrolling certain of their products assert that they are blocked by statistical entanglements.

Third, OPA has discouraged business from moving immediately under one section of the law to speed decontrol. This section provides that products "not important in relation to business or living costs" may be freed from price ceilings immediately and must be freed by December 31, 1946, unles OPA specifically finds they are important to these costs. Instead of making it possible for business to move under this section now, OPA has issued rules which have the effect of blocking such a course until the end of the year.

In the light of obstacles such as these, it is not surprising that the record of decontrol to date is not impressive.

Decontrol Record

Since June 30 there has been a drop from about 70% to about 60% in the total value of products under price control. But most of the drop has been accounted for by food products, which Congress took the lead in decontrolling, and by industrial machinery which was being decontrolled when Congress acted. By far the larger part of manufactured consumer goods remains under control.

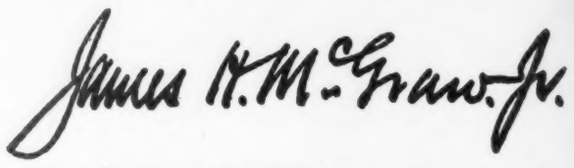
This, however, is no time for business to be discouraged. Rather, business should accept the obstacles put in its way as a challenge and work harder than ever for speedy decontrol.

The case for decontrol should not be stated in narrow technical terms. It should be based on grounds of broad public policy, and should demonstrate how a speedy return to a free economy can hasten the full release of the nation's productive power.

For example, there should be very clear demonstrations of how, in far too many cases, rigid price ceilings—(1) discourage production of key parts and materials by making such production relatively unprofitable, (2) create shortages of key parts and materials which tie up broad ranges of production or result in piling up lopsided inventories of partially completed goods, and (3) thus cut away the foundations of a stable economy and the prospects of steadily sustained employment.

There should be equally full demonstrations of the well known sequence from shortages to unrealistic price ceilings to black markets. Meat prices are rolled back, but the meat is rolled under the counter.

A free economy is worth fighting for. Liberty is preserved only by the constant struggle of those who believe in it. Neither the interests of the nation in a strong and well-balanced economy nor the interests of business itself will be served by drifting at this time. Now is the time for business to lead a strong offensive for speedy elimination of price control.



President McGraw-Hill Publishing Company, Inc.

TEXTILE WORLD

OCTOBER, 1946 : VOL. 96 : NO. 10

Can COTTONS Sustain New High Price Level ?

HIGHLIGHTS: *Backlog of civilian demand is stabilizing force—World demand for fiber has quadrupled raw-cotton price—Labor cost is over twice prewar—Future hinges on 1947 cotton crops and status of general business—Cottons apparently trying for proportionately larger slice of national income.*

By SANFORD PARKER, *McGraw-Hill Economic Staff*

WHEN TEXTILES came out of the war over a year ago, most cotton men felt fairly sure of two or three years of uninterrupted boom for their division of the textile industry, with even better prospects in store if the nation realized its dream of full employment after the war, unlike the last, and the backlog of civilian demand [illegible] to 75% of a normal year's output, and it would take two or three years of high production just to work that off (see chart in panel below).

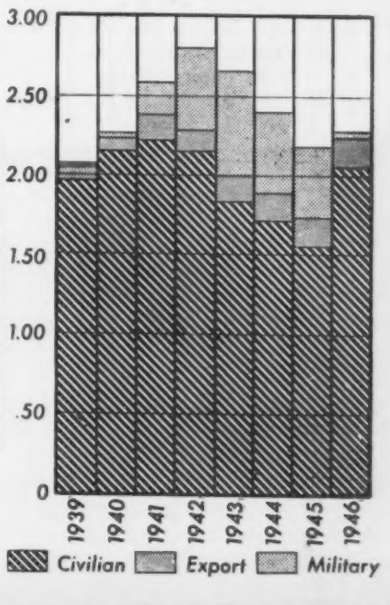
Now, however, even with full employment, many a textile man is scratching his head in wonder whether soaring prices may not break the market before many months are out. Recent successive jumps have raised raw-cotton costs over 60% and labor costs 20% above the levels at the war's end. And costs, perforce, have pushed wholesale cotton-textile prices up as much since V-J Day as in six years before, until now they stand 150% higher than they were at the war's outbreak seven years ago.

The net result is that cotton textiles have just entered a danger zone reminiscent, though not yet duplicate, of 1919-1920 when prices finally cracked by 50% and output dropped. At today's prices and output, the industry is beginning to try for a larger share of the consumer's dollar than history shows it enjoyed year-in-and-year-out in normal times: the value of its output has climbed faster and farther above prewar days than has the value of the national income, which meas-

[illegible] Page 6

Civilian Deficit Is Put at 6 to 9 Months Output

Output and civilian supply of cotton textiles have returned to prewar levels this year. But the current production rate provides no margin for working off the backlog of demand built up during the war. The total deficit in civilian supply for 1943, 1944, 1945 (together) comes to about five-months' production on 1939 standards of supply, seven-months' output by 1940 standards. Also, inventories of finished goods were used up during the war, and their replacement would call for additional yardage. Approximately six to nine months' of normal output are needed just to make up these wartime backlogs, over and above current requirements. That's in straight physical quantities. Whether consumers have the dollars to buy at today's prices is another matter.



Small 1947 Crop Means Further Price Rise

The whole world cotton situation has turned around sharply in the last year or two from one of expanding surplus to one of shrinking supplies, and today the raw fiber looks as though it will become scarcer for several more years to come. But the balance between raw cotton supply and demand always turns sharply when it turns, and big crops may yet weaken the market quite suddenly.

The new chapter in the cotton story is one of falling crops and rising use. U. S. cotton acreage was almost halved by AAA acreage restrictions in the depression and was further reduced by shifts to more needed crops during the war. So, despite increased yields per acre, the crop dwindled from 14 million bales in the '20s to 12 million in 1939-1944, and to almost 9 million last year and this year. During prewar and war years, exports went down faster than U. S. consumption at mills went up, so the surplus carryover continually mounted up until V-J Day. But then exports resumed, lopping a third off the carryover in the 1945-1946 season and as much more in the current season, leaving only about 3½ million bales for next July 1. That is just about the necessary minimum, and already the carryovers have been culled for best grades and lengths.

Under the ravages of war, foreign-cotton use for textiles tobogganed even more sharply than foreign crops, but consumption now is recovering much more rapidly. This year's consumption will run much nearer the previous 22-million bale high. Hence despite U. S. exports, the record 1946 foreign carryover of 14 million bales will be cut to 10 or 11 million next year.

Altogether, world consumption will considerably exceed new crops, sharply reducing carryovers. Another such deficit in 1947-1948 could mean real over-all shortage.

That is the background for soaring raw cotton prices, which have carried to above 37¢ a pound in the U. S. and about 26¢ at Sao Paulo, Brazil, most representative of the foreign markets. The U. S. price is four times prewar quotations.

Naturally, those prices will bring out larger crops next year—how much larger, no one knows. Foreign crops are beset by production difficulties left over from the war. At home, it's a matter of diverting acreage back into cotton, a process which will be slowed by the long shift to other plantings.

Because of the U. S. quota on imports of foreign cotton, available American supplies depend only on the size of the home crop and the attractiveness of exports. Our 4¢ export subsidy and Brazil's 3/4¢ export tax reduce the 10 to 11¢ differential between U. S. and foreign prices almost by half. So if foreign crops again fall far short of consumption next year, world users will compete with Americans for our fiber. And whatever the case abroad, things will stay tight here if the 1947 U. S. crop is still small. If both crops were to go up sharply next season, the loosening of supplies would affect U. S. and world prices severely, but at the moment that looks unlikely.

There is no necessary ceiling on where cotton may go—hence the talk in the South that cotton is "cheap" even at 40¢ or 50¢—but there definitely is a floor, in case the situation does turn, either through a big rise in crops or a major drop in use. The federal government is committed by law to loan to farmers 92½% of "parity" on raw cotton—and that means a minimum fiber price of about 25¢ next year.

ures the over-all market (last chart, next page). Over the years, ups and downs in cottons have been greater than swings in national income, but not as much greater as now.

As long as things stand where they are, the abnormal backlog of war-built demand seems sufficient to support today's price level, and cotton textiles cannot be deemed ripe for an early bust.

But the crossing into a market danger zone does mean that the industry now is vulnerable to marked change in any of several economic conditions—vulnerable to a great surge of cotton fabric output, or to a new flight of costs and prices, or to a sudden outcropping of inventory troubles, or to a general recession in business activity and national income.

That conclusion is more a warning of possible danger than a signal of certain catastrophe, and it takes the best account of the evidence available. However, the problem is unfortunately still more complex. Thus, from a close look at the record (chart, page 103) it seems that dollar output of cottons is not yet so far out of line with income as in 1919—but add in competitive rayon goods, which entered the market between the two wars, and the lack of balance is much more like 1919. Similarly, figures based on OPA ceilings purport to show that retail prices of cotton goods have not risen as dangerously as wholesale prices of cloth—but add in black marketing, "upgrading," and misticketing, and prices to the ultimate consumer are not so rosy.

For the future, the question is: What are the prospects for changes in cotton-textile output, costs, or inventories, or in general business?

OUTPUT STEADY. No great surge of output that would flood the market is to be expected. Employment is the key to production; and while mill labor forces have been rebuilt by 10% since the war's end, manpower now is tight and will remain so, as long as general business is high. (Unemployment decreased to 2,000,000 in August, which is considered the minimum, even at "full" employment.)

Although consumption of raw cotton at the mills is running more than one-third higher than in 1939, the average consumer will get no more goods now than then. For the cotton poundage is going into heavy tire, bagging, and similar fabrics. The actual yardage of cloth will be up only 10% over the prewar year, and increased exports for relief will take up most of that gain. At the moment, output of domestic yardage is improving only slightly. Even competitive rayon cloth has not increased very much in volume from 1939, when stacked against the four-times greater yardage of cottons. For again, most of the 80% jump in rayon poundage is going into tire fabrics.

Costs may well go up and push textile prices further out of line. Raw cotton is the most important factor. It has gone up more than labor costs since 1939, 300% vs. 120%, and fiber was the larger cost item to begin with. The U. S. and world cotton situation is becoming much tighter and prices reflect that fact, both here and abroad. Much of the future unfortunately hangs on unpredictable 1947 weather conditions for both American and foreign crops. Supplies may loosen next year, but not before.

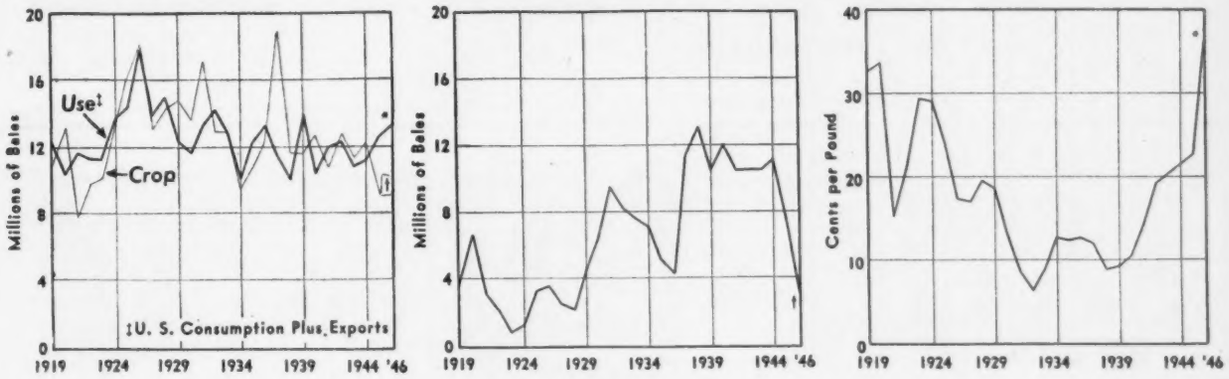
As for labor costs, wages are under pressure both from a tight labor supply and from the unions' "Operation Dixie." Average hourly cotton-textile wages have advanced 47¢ since 1939, the same increase as the average for

(Continued on page 198)

COTTON TEXTILES—
Are Rocketing Costs Killing the Market?

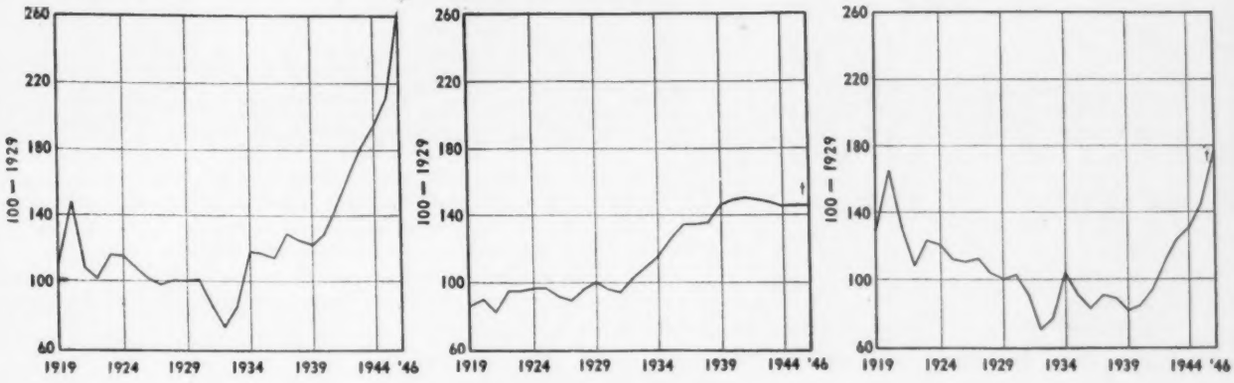
RAW COTTON

Crop Falls, Use Jumps, ... So Carryover Shrinks, ... And Price Skyrockets.



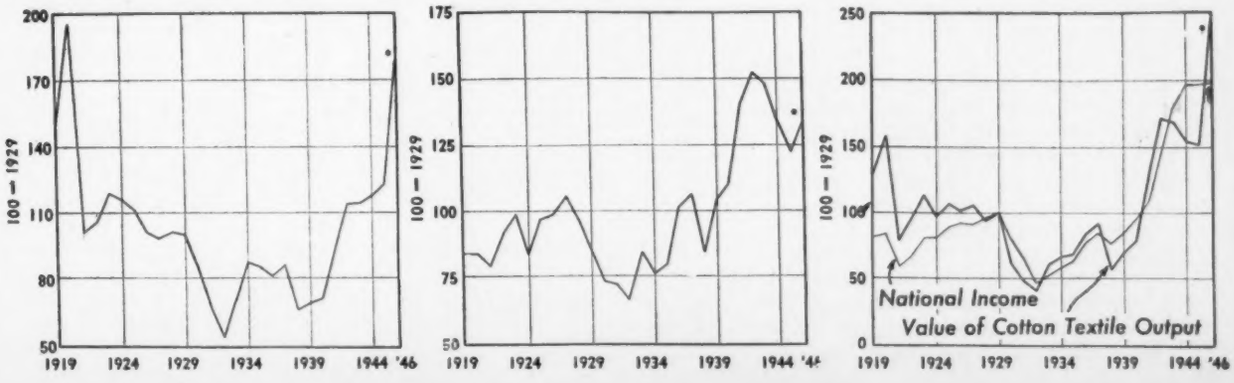
LABOR

Wages Climb, ... And Productivity Slumps, ... So Labor Costs Soar.



TEXTILES

Fiber, Labor Costs Push Prices, . . And Output Advances. **Are Textiles Out of Line?**



*September level ‡1946 estimate

Old-Model Frames Can Be MODERNIZED

HIGHLIGHTS: *Changing a band-driven spinning frame to tape drive requires lowering the 8-in. cylinder 4 in.—Rebuilt twister operates at 9,200 r.p.m. of spindles instead of 6,200 r.p.m. as formerly—Power consumption reduced 40%.*

By J. M. HARDY

MODERNIZING SPINNING FRAMES and twisters by rebuilding old-model machines has yielded satisfactory results to one medium-size mill spinning yarns ranging from 10s to 80s. In addition to increasing production, the rebuilding program has improved the mill's yarn breaking

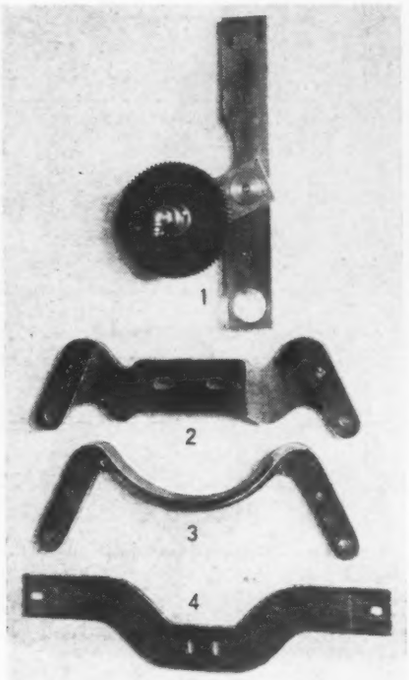


Fig. 1. The cylinder of a band-driven frame is centered on the same plane as the spindle whorls, but the cylinder of a tape-driven frame is centered one-half the diameter of the cylinder lower, so that the top of the cylinder is on the same plane as the spindle whorls. To change a band-driven frame to tape drive requires that the cylinder be lowered and supported in such a way as not to interfere with other working parts. This purpose was accomplished by the use of the four parts shown: (1) swing arm and carrier-gear plate with a micarta idler gear; (2) casting designed to fill in a gap cut in an intermediate samson and to support the cylinder-bearing housing; (3) casting to fill in a gap cut in an intermediate samson; (4) yoke to support drive-end outboard bearing.

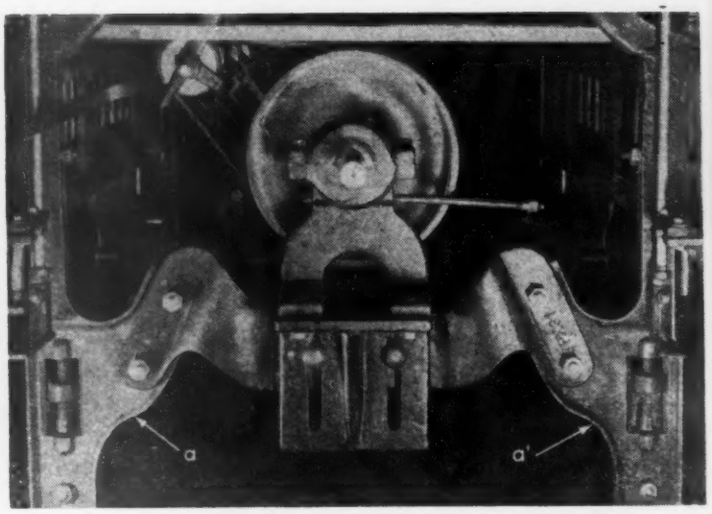


Fig. 2. After the 8-in. cylinder was removed, a gap was cut between a and a' in the bottom crossmember of each intermediate samson to permit the 10-in. cylinder to be set in a lower position. Note use of fill-in casting, shown as 2 in Fig. 1, which ties the samson legs together and supports the housing of the ball bearing which replaced the original plain cylinder bearing. Headless setscrews were used to line up the bearing bracket, and dowel pins to lock the bracket in place.

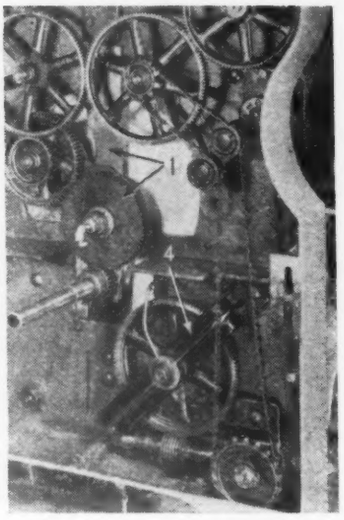


Fig. 3. In the head ends of frames changed from 8-in. to 10-in. cylinders, square holes were cut in frame-end castings to lower the cylinders and to make room for head-end cylinder-bearing boxes. Note use of the swing arm and carrier-gear plate and the micarta idler gear, 1 (shown also as 1 in Fig. 1). The idler gear was necessary for connecting the cylinder gear with the stud gear, which was moved to the slot in the opposite side of the head end, so that the drafting rolls would continue to run in the same direction. Because the spindle rails had to be lowered for an 8½-in. traverse stroke instead of a 7-in. stroke, the 10-in. cylinder had to be so low that the cylinder gear came into contact with the 176-tooth builder-cam worm gear. A 125-tooth gear, supported by yoke 4, was substituted.

strength and decreased power consumption and maintenance costs.

The machines changed consist of 69 spinning frames and 16 twisters, the models of which range from 1907 to 1914. The changes made were as follows:

1. Thirty-six spinning frames, 3½-in. gage, were changed from band drive using 8-in. cylinders to tape drive using 10-in. cylinders; roller-bearing, wooden-blade spindles for paper tubes; ball-bearing cylinder boxes; tape idlers; and long-draft rolls.

2. Thirty-three spinning frames, 3½-in. gage, were changed to tape drive. On these frames, the old spindles were rewhorled for tapes and the original 8-in. cylinders were equipped with new heads, couplings, arbors, ball bearings, and tape idlers.

3. The same changes were made on 16 twisters, 3½-in. gage, as were made on the 3½-in. gage spinning frames.

The following data for 20s carded yarn is typical of the various numbers of yarn spun on these rebuilt frames:

Cotton—1-in. strict low middling Mid-Western
Twist multiplier—4.00
Spindle speed—9,500 r.p.m.
Roving—2.50 hank, one process, creeled double
Breaking strength of yarn—95 lb.

Before the twisters were rebuilt, a 7½-hp. motor was required to operate each machine at a spindle speed of 6,200 r.p.m. With a larger ring and a longer traverse, each twister now runs at a spindle speed of 9,200 r.p.m. with a 4½-hp. motor. Comparable power reductions were made on the spinning frames.

Replacements and upkeep on the anti-friction bearings have been almost negligible, and the latest type of paper tube seems quite substantial.

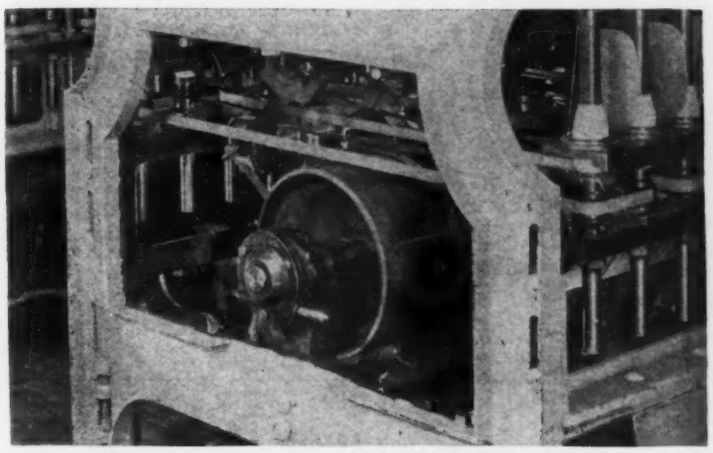
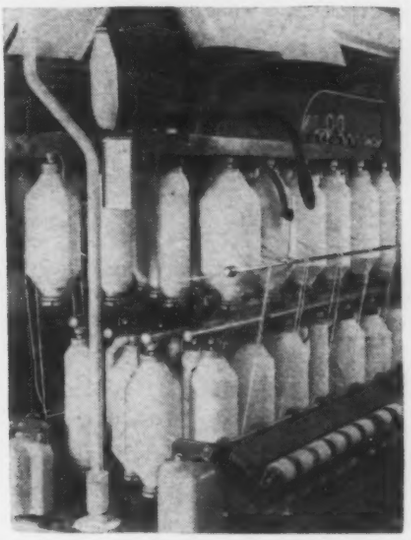


Fig. 4. Ball-bearing cylinder bearings were also placed at the foot ends of the frames; and 36 of the 69 spinning frames were equipped with roller-bearing, wooden-blade spindles for paper tubes, and with long-draft rolls. These frames have 8½-in. traverses and 2¼-in. rings. They are used to produce 10s to 20s yarn from double-creeled, one-process roving run on 10x5 and 9x4½ slubbers.



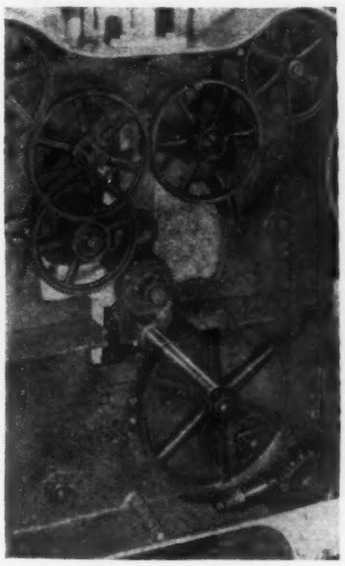


Fig. 5. On the 33 frames changed to tape drive, but on which the 8-in. cylinders and conventional spindles were retained, the head-end arrangement was practically the same as in Fig. 3. However, a smaller idler gear was needed; and it was possible to retain the 176-tooth builder-cam worm gear.

Fig. 6. (Upper right) A special creel was needed to accommodate double-creeled 10x5 roving. Ball-bearing bobbin holders and open-middle creel boards were used. This type of creel is easily cleaned by overhead cleaners. Note the hood under which bobbins taken out of the creel are placed to prevent tails being blown into the creel by the blower.

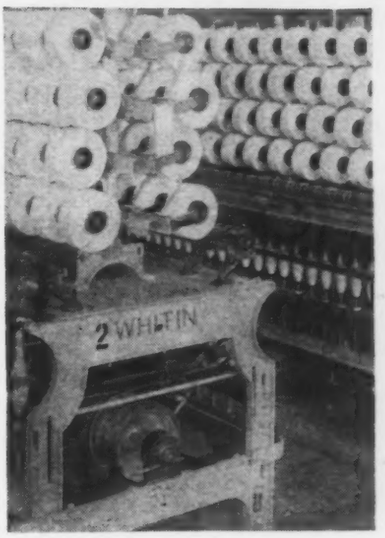


Fig. 7. These twisters were rebuilt in the same manner as the spinning frames in Figs. 2, 3, and 4. They are equipped with separators and 2¼-in. rings and use an 8½-in. traverse to ply 20/2 to 80/2 yarns.

SWISS Novel

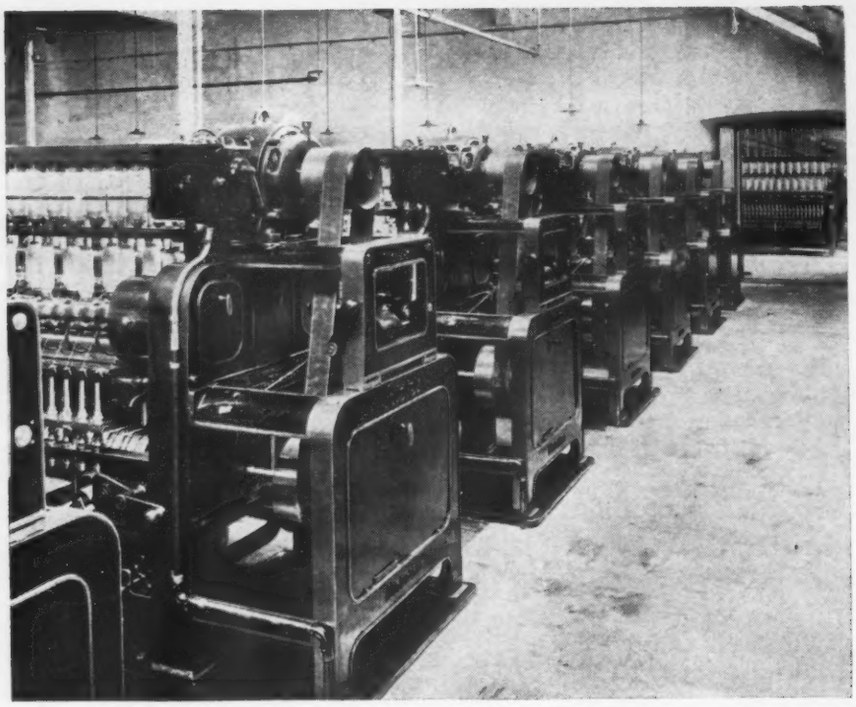


Fig. 1. The conventional ring frame is widely used in cotton spinning and is found very efficient for small bobbins; i. e., for fine yarns, high counts. For low counts, however, big bobbins are given the preference; but on an ordinary frame, big bobbins have the disadvantage of working with greatly varying balloon height. *(Reiter spinning frames; Brown, Boveri motors)*

HIGHLIGHTS: *Intricate speed regulation and tension control achieved for spinning frames—Automatic winder good for crepe yarns —Warp-creel bobbins braked electrically — Hot-air slashers replace other types—Looms lose superstructures—Package drying speeded up —Tiny device replaces conventional shuttle in new loom.*

Pictures and descriptions were presented at the Oct. 2 meeting of the American Association of Textile Technologists by Dr. Honegger, who is professor of textile engineering and textile industries at the Swiss Federal Institute of Technology. He also serves as a consulting engineer on textile problems.

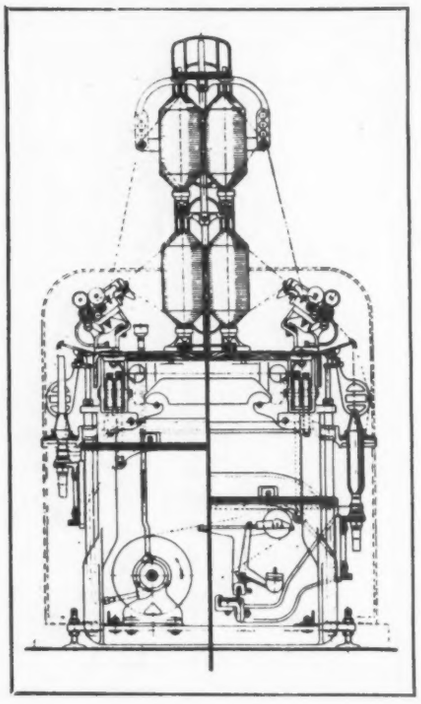


Fig. 2. A new frame, sketched here, has been developed for coarse yarns. Only the winding motion is performed by the ring rail; the spindle rail accounts for the traverse motion. The spindle rail is slowly shifted downward; and the thread board may be shifted parallel to the spindle rail when beginning to spin, until the balloon has been reduced to its best height, then it is kept immovable. From this position, in about one third of the bobbin, to the end, the height of the balloon varies only by the winding motion; very short balloons will never be met on these frames. *(Reiter)*

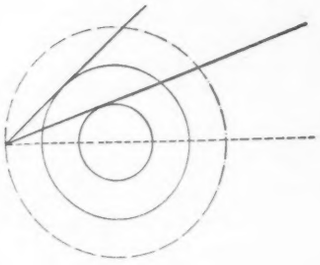


Fig. 3

Fig. 4

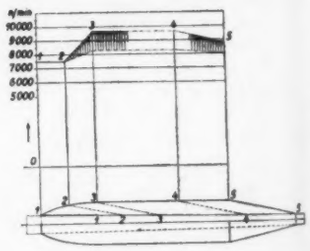


Fig. 5

Figs. 3 to 7. Varying yarn tension is a disadvantage of ring spinning, a mechanical consequence of the spinning principle. The air friction of the balloon and the traveler friction on the ring are approximately constant; to overcome them a tangential force, acting at the traveler, of constant value, is necessary. This force is exercised by the tension of the yarn between bobbin and traveler; owing to the varying angle of the yarn (Fig. 3), a varying yarn tension is necessary to give a constant tangential force. The force will reach its maximum value at the top of the winding motion, contracting the balloon to its smallest shape, Fig. 4. Ring spinning with constant yarn tension will be attained by driving the frame with correctly regulated variable speed. At the top of the winding motion, when winding on the smallest diameter, the speed will reach its minimum value (Fig. 5). Besides producing yarn of constant quality, this process will give an output increased by 10 to 15%. The constant yarn tension is of particular value when spinning with large rings. Proof of theoretical claims is born out by the two diagrams in Fig. 6. They give the yarn tension just below the drawing rolls during one winding movement of the ring rail, spinning with constant speed and with regulated speed. The spinning yarn tension is practically constant in the second case when working with three-phase commutator-motor spinning regulators (Fig. 7), which can be used on woolen and worsted frames as well as on cotton.

Machines Show Developments

By DR. EMIL HONEGGER

THE UNDERLYING OBJECTIVE of developments in Swiss textile machinery is maximum production per man-hour of the highest quality goods. This objective is an inevitable consequence of economic conditions in Switzerland, an expensive country with high wages, which is not competitive in articles made in bulk; Switzerland concentrates on quality. Great efforts have been made to design ordinary and automatic precision machines which require a minimum of manual operation and show a remarkable degree of versatility. The increased demand for finer yarns and fabrics and the increased use of rayon and spun rayon favored a development, on which industry had already started, aimed at a higher standard of precision in machine construction.

In this report of Swiss-made textile machines only some examples will be quoted. In choosing them, cases have been given the preference which found divergent solutions in the U.S.A. and in Switzerland.

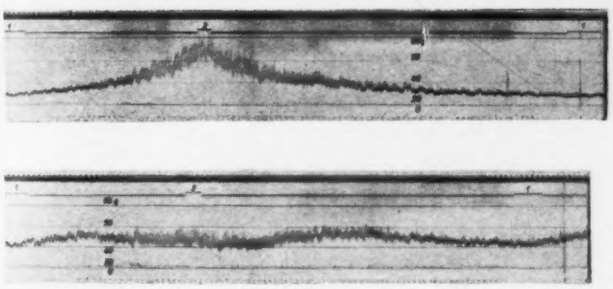


Fig. 6

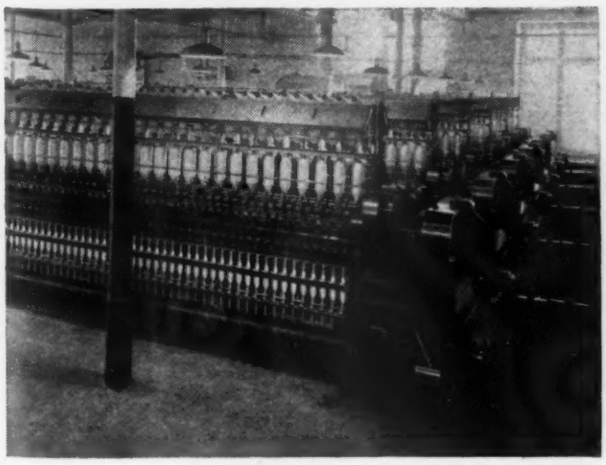


Fig. 7

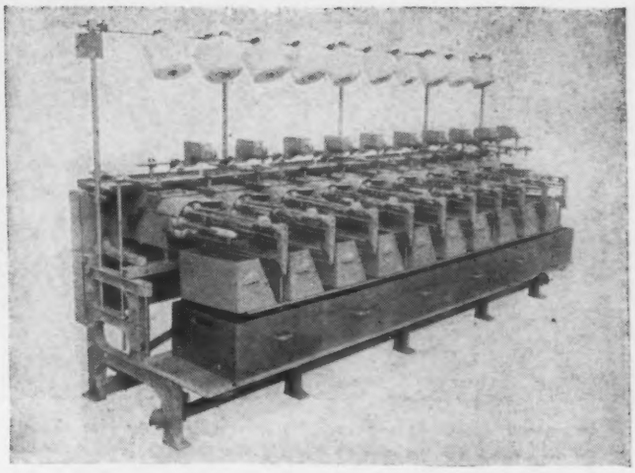


Fig. 8. Automatic filling winding has been realized in different ways. The winder shown above has a seven-spindle revolving head. While one pirn [filling bobbin] is being wound, empty pirns may be inserted in the six other spindles. The machine is called "Non-Stop" and can wind yarn from revolving bobbins (e. g., crepe yarns). *(Scharer)*

Fig. 9. This automatic filling winder (also made in the U. S.) has a large magazine capacity and is highly automatic. *(Schweiter)*

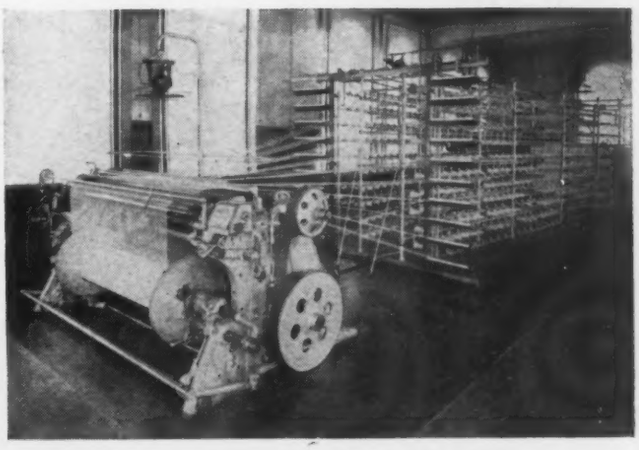
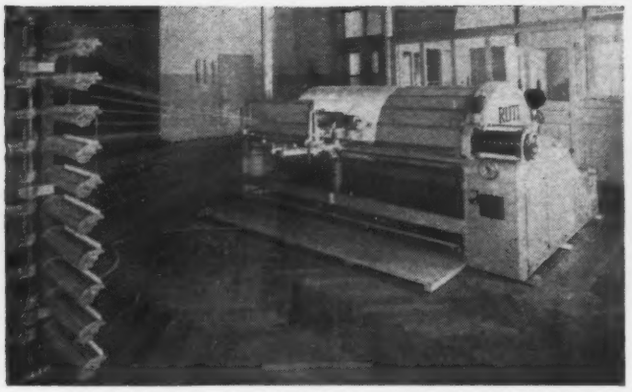
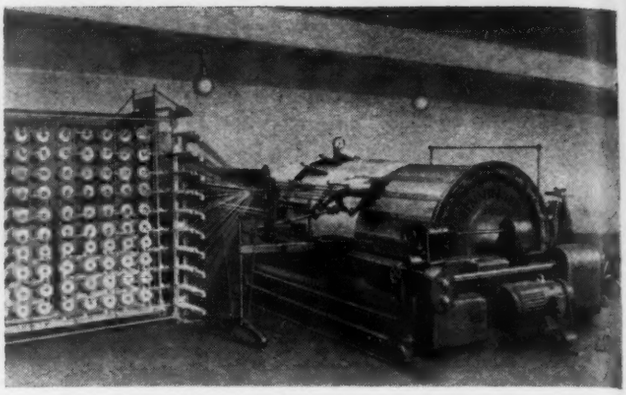


Fig. 10. The latest warper will run between 150 and 550 yd. per min. The creel, designed for cones or cheeses, is fitted with easily adjustable yarn brakes and with electric stop motion which makes use of fully inclosed mercury contacts, combined with light signals. The beam is held between fixed bearings, while the driving drum is suspended in a pendulum and will give way backward according to increase of beam diameter. A strong brake rapidly stops the drum, and a reverse device allows the warp to be turned back about two yards to find a broken end. *(Ruti)*





Figs. 11 and 12. Cone sectional warpers, chiefly used in the silk industry in the past, are now being used increasingly in all branches of weaving, particularly for mutlicolored warps. Improved design allows speeds beyond 600 yd. per min., while the chain length may attain 3,300 yd. Speed is infinitely variable within very wide limits, and reel can be stopped rapidly. *(Fig. 11, Ruti; Fig. 12, Benninger)*

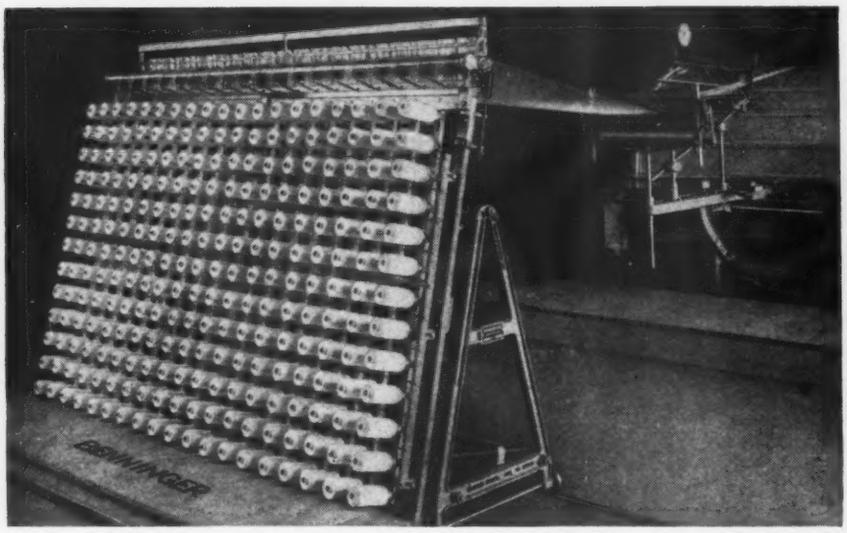


Fig. 13. This warp creel for revolving bobbins has special bearings on its bobbin supports which are fitted with electro-magnetic brakes to prevent bobbins from turning further on when the warping creel stops. The braking effect can be exactly adjusted to give any desired yarn tension, which can be kept constant from full to empty bobbins. A feeler roller at the top of the creel controls yarn tension and lights a signal lamp in case of deviation. This creel, much used for crepe yarns, may work with a warping speed four times higher than other systems with revolving bobbins. *(Benninger)*

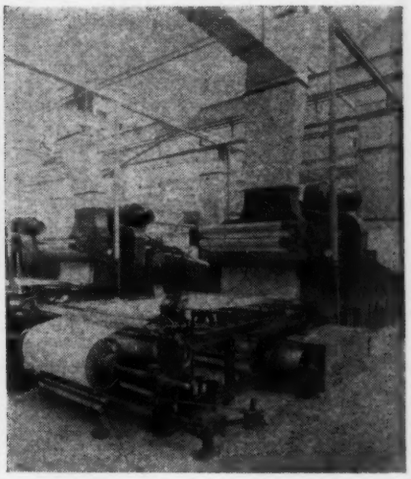
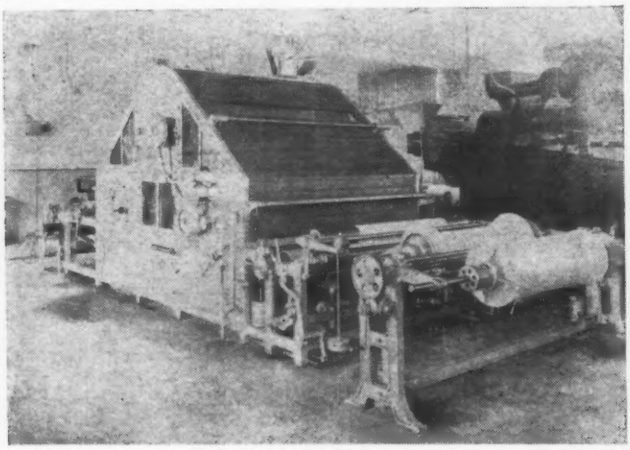
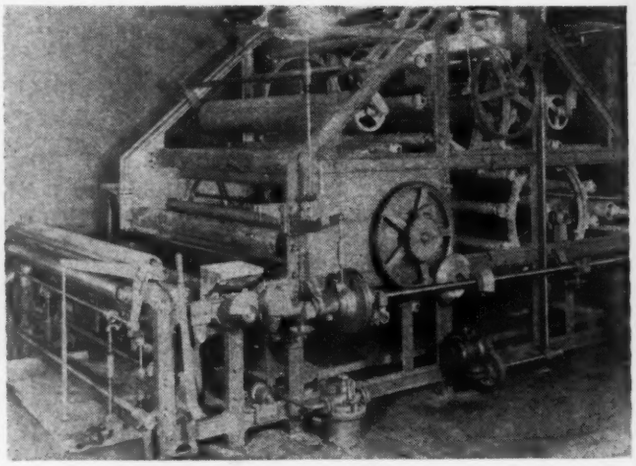


Fig. 14. Hot-air sizing machines have completely supplanted types with steam-heated drying cylinders. The machines illustrated are chiefly used for cotton. *(Ruti)*





Figs. 15 and 16. Special hot-air sizing machines have been designed for viscose and other synthetic fibers. Both machines shown have automatic temperature regulation in the size box and in the hot-air chamber. Machine at right has devices to keep tension as low as possible. Yarn supports, in the shape of skeleton cylinders, are narrowly spaced; moreover, the guide rollers, borne by ball bearings, are themselves revolving, so that the supported points of the yarn will be continually changing and will not be influenced by contact. When the machine is stopped, an auxiliary drive will keep the skeleton cylinders slowly moving, the guide rollers revolving as they move along the warp, thus protecting the warp from the action of local pressure. *(Ruti)*

Figs. 18 and 19. Looms without superstructure have shafts either driven from the bottom or laterally suspended. The arguments for such looms are the reduced danger of soiling warps and fabric, the better access of light to the important parts of the looms, the improved stability, the easier access to all parts of the looms, and the undisturbed sight through the weave shed. Practically no looms with superstructures are being made in Switzerland for cotton, wool, silk, or synthetics. *(Fig. 18, above, Ruti; Fig. 19, below, Saurer)*

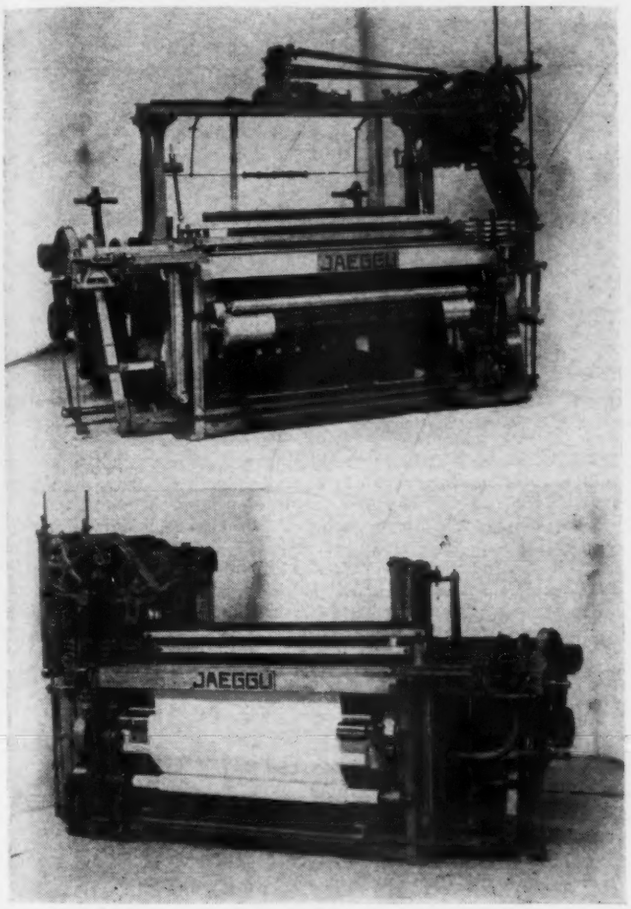
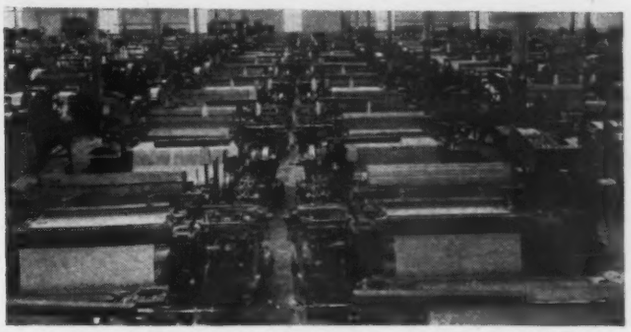
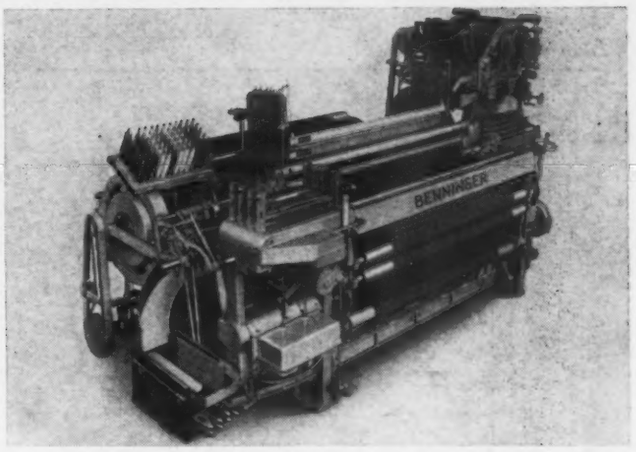


Fig. 17. Swiss loom with and without superstructure. *(Jaeggli looms, Staubli dobbies)*





Figs. 20 and 21. This "non-stop" automatic loom has a specially designed shuttle changer. The empty shuttle is deviated through a rear shuttle box without bottom, as shown at *A* in Fig. 21, into a shuttle receptacle. At the same time a full shuttle, *B*, is released from the magazine and guided by a transfer device into the shuttle box, the front of which is open. *(Benninger)*

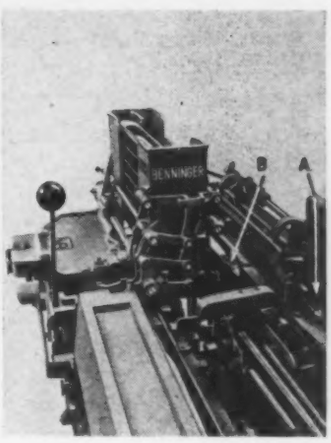


Fig. 21→

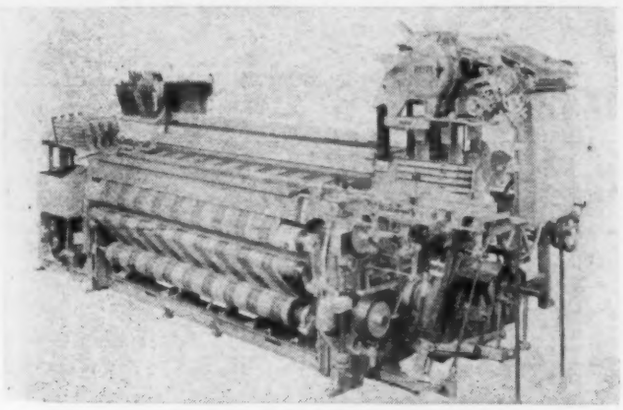


Fig. 22. On this loom, shuttle change takes place while the loom is stopped, and an auxiliary drive operates the automatic device. The loss of time is negligible. *(Ruti)*

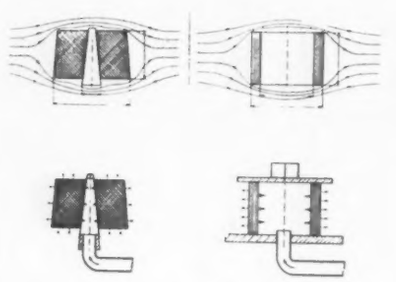


Fig. 23

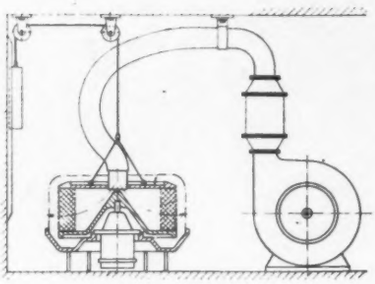


Fig. 24

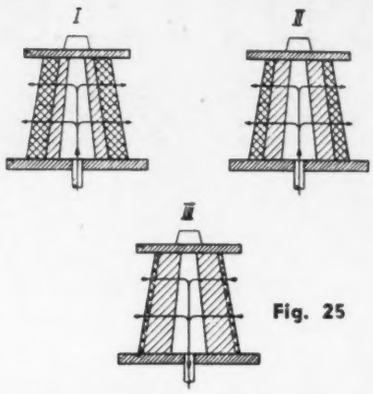


Fig. 25

Figs. 23 to 25. A special drying method for cross-wound cheeses, spinning cakes, or fibrous material—investigated in the laboratory of the Swiss Federal Institute of Technology—disclosed that drying time could be reduced to a small fraction by pressing the air through the yarn mass, as shown in Fig. 23. A big cheese can be dried in one or a few hours' time. Two recommendable applications are illustrated in Figs. 24 and 25. Fig. 24 shows a centrifuge in which loose fibers have been mechanically dried first; they will then be completely dried by blowing preheated air through them. Fig. 25 shows a cross-wound cheese being dried by blowing preheated air through it from the inside until only a small part of the bobbin is still wet. Then the air flow is reversed.

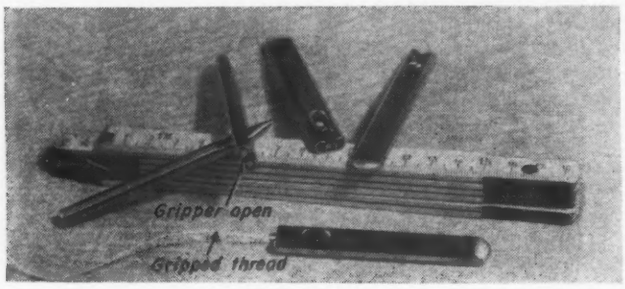


Fig. 26

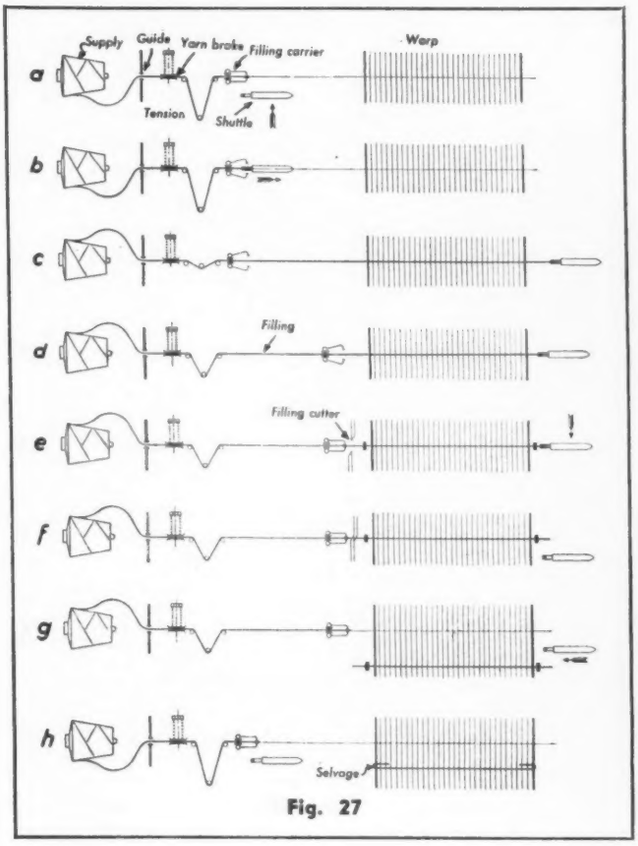


Fig. 27

Figs. 26 to 29. In one new "weaving machine," the filling bobbin is not carried along by the shuttle (Fig. 26), but is fixed laterally to the frame of the machine. Usually cones of up to 4 lb. of yarn are employed as shown in Fig. 27. (A different selvage that can be used employs circularly operated selvage ends to bind the filling.) A special transport device takes the several shuttles slowly back from the brake to the starting point. The spring picking motion, entirely made of steel, consists of a spring torsion rod, contained in a tube and twisted about its axis. A bent-lever system starts the picking motion in the right moment. On its way through the shed, the shuttle flies through small guide plates (protruding through the lower shed) which are drawn under the warp and fabric when beating up. The shuttle boxes on both sides are immovable, but the receiving box can be adjusted to any required width of fabric. Harness shafts are driven from the bottom and the depth of shed is unusually small. All important gears and mechanisms are totally enclosed in casings and run in an oil bath. Fig. 28 shows several "weaving machines" of 130-in. and 86-in. reed width, Fig. 29 one 150-in. It is obvious that various filling colors can be used by means of a selecting device, which has been developed. *(Sulzer)*

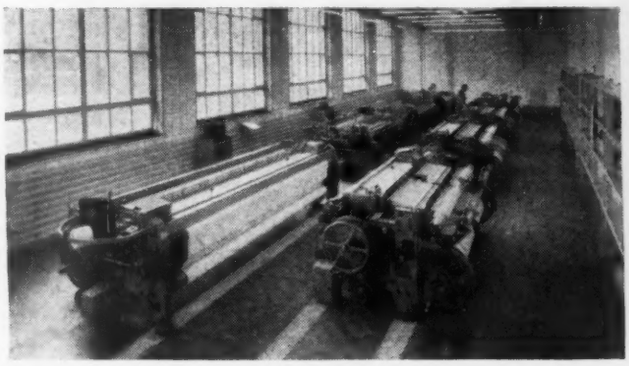


Fig. 28 ↑

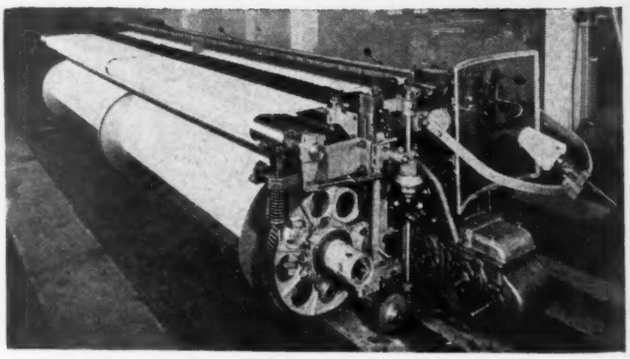


Fig. 29 ↓

KNITTING PILE FABRICS
On Circular or Warp Machines

HIGHLIGHTS: *Cut or uncut pile may be knitted by spring or latch needles —On circular machines, extra loops are formed on needles; on warp knitting, pile yarn does not go on needle hooks—Numerous designs are feasible, but knowledge of limitation is essential for best results.*

By HARRY WIGNALL, *Leicester, England*

PILE OR PLUSH EFFECTS in knitted fabrics may be produced on the following machines: (1) circular spring-needle machines; (2) circular latch-needle, sinker machines; (3) warp-knitting machines. The circular latch-needle, sinker machine gives the greatest production. The spring-needle machine produces a superior fabric and has better color design possibilities. The warp-knitting machine has in the past been slower producing, although the design possibilities are good; and the fabric possesses special characteristics not shared by the filling-knit types.

CIRCULAR SPRING-NEEDLE MACHINES. The loop-forming elements of the "Terrot" type of spring-needle machines are shown diagrammatically in Fig. 1. The needle ring *a* rotates around a vertical shaft (not shown) which is supported by an overhead beam, as described in "Knitting Mathematics and Mechanisms" by John Chamberlain, F.T.I., of Leicester, England.

The spring needles *b* which are radially and horizontally dispersed, have turned shanks which fit into small holes drilled in the sinker ring. They are clamped into tricks or groups by sectional plates *c*.

The special multi-throated, loop-forming sinkers *d* are carried in the rotating sinker wheel fixed to spindle *e* and are driven at the same linear speed as the needle ring by means of the bevel gear *f*, which meshes with a toothed ring secured to needle ring *a*.

The knocking-over sinkers, or platines, *g* are placed vertically between the needles as shown and are cammed forward at knock-over point. A presser disk *h* shown in Fig. 2B and a clearing wheel (not shown) are also required for completing the formation of the stitch.

The number of feeds is governed by the machine diameter, and a separate course is completed at each feed at each revolution. Between the feeds, the old loops are held back of the knocking-over sinkers by means of the guard *j*. The yarn is supplied from the feeding wheels through guides in the path of the loop-forming sinkers in such a manner that each individual thread is directed to the appropriate sinker throat.

In this case, three loops are formed by the sinker as shown in Fig. 1 and Fig. 2A. The sinkers are then cammed in an outward direction and draw the loops under the needle beard, as shown in Fig. 2B. The old loops are retained on the stem of the needle as shown.

The needles then pass the presser disk *h* which closes the beard, and the knocking-over sinkers *g* are cammed forward to land the old loops on the beard as shown in Fig. 2C.

The loops are then brought further forward until the old loops pass the needle head and hang on the new loops. At the same time, the rotation of the sinker wheel has brought the sinkers away from the needles. At this stage, special arrangements are made to cut the pile loops automatically, if required.

The clearing wheel, which is placed at an angle to a tangent to the needle circle, brings off any old loops which have not been cleared properly; and

(*Continued on page 222*)

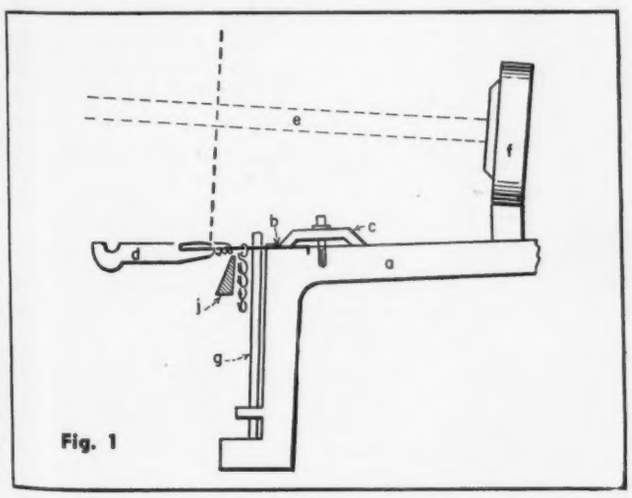


Fig. 1

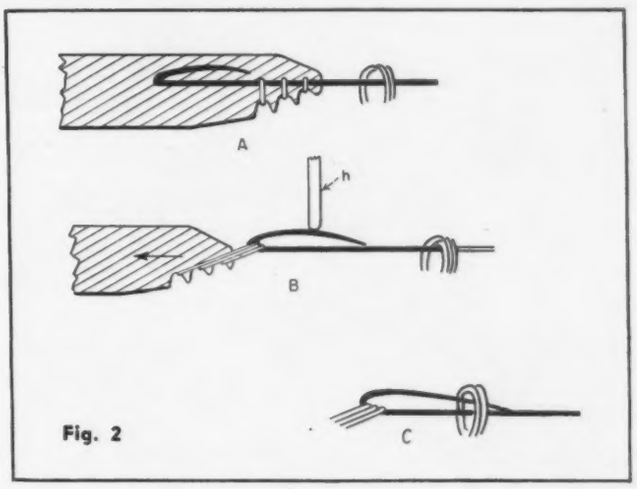


Fig. 2

Fig. 1. Loop-forming elements on circular spring-needle machine. Fig. 2. (A) Detail of loop forming (see Fig. 1). (B) New loops shown under beard; also action of presser disk. (C) Old loops being landed on beard of needle ready for knocking-over.

Personnel Case-Studies Aid SUPERVISOR TRAINING

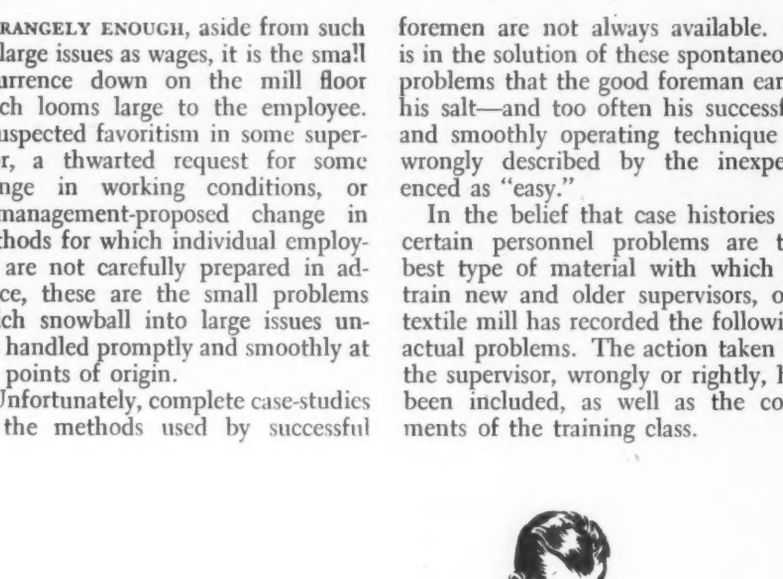
HIGHLIGHTS: *Complete record of personnel problems kept by one mill —Studies of each problem and of the action taken by supervisor are made by training class—Comments by training class are helpful in the formulation of company policy.*

By R. THURMAN TAYLOR

STRANGELY ENOUGH, aside from such large issues as wages, it is the small occurrence down on the mill floor which looms large to the employee. A suspected favoritism in some supervisor, a thwarted request for some change in working conditions, or a management-proposed change in methods for which individual employees are not carefully prepared in advance, these are the small problems which snowball into large issues unless handled promptly and smoothly at the points of origin.

Unfortunately, complete case-studies of the methods used by successful foremen are not always available. It is in the solution of these spontaneous problems that the good foreman earns his salt—and too often his successful and smoothly operating technique is wrongly described by the inexperienced as "easy."

In the belief that case histories of certain personnel problems are the best type of material with which to train new and older supervisors, one textile mill has recorded the following actual problems. The action taken by the supervisor, wrongly or rightly, has been included, as well as the comments of the training class.



Training in industrial relations can be expedited for the new supervisor, if he is allowed to read the experience of other supervisors in solving typical problems.

PROBLEM I.

The employee was about 45 years old and had been working for the company about 16 years as a slasher tender. He was a good, regular worker. When it became necessary to ask him to run a new style on the slasher, he asked for a transfer outside to avoid running the new style.

The general overseer was about ready to fire him, when he suddenly decided that there must be some hidden reason for the employee's attitude. Upon checking, he found that the employee did not like the method of leasing out which the new style required. Because the new style was difficult, the employee was afraid that the new method would mar his record.

The overseer talked to the employee about his past record, his ability to do the more difficult new job, and the fact that his machine was the only one equipped to handle the new style. He then asked the old employee to assist him in figuring out a better way to lease-out the warps. A better method was found, and the employee ran the new styles successfully.

The general comment of the training class agreed that an employee with a long service record was almost certain to have some idea about improving methods on his job, and that supervisors should obtain his cooperation before a new method is adopted and enforced.

PROBLEM II.

The weave-room fixer was 45 years old, married, and had one child. He had been a fixer for about two years when the supervisor placed him on a job which required the cooperation of two fixers. Immediately trouble developed. Both fixers began to blame the other fellow for mistakes, and no cooperation was obtained from them.

The second-hand transferred the first fixer to another job—which still required the cooperation of two men —but this time the supervisor talked over the change thoroughly with both parties. No more trouble was made by the fixer.

The training class commented that this problem could have been prevented if the foreman had followed the rule that employees should be prepared in advance for the changes which affect them.

PROBLEM III.

The man was 28 years of age, married, and had a medical discharge from the Army. He complained that he could not keep his job up, although women were doing the same job at greater production on other shifts. He complained first of stomach trouble, then of headaches.

The supervisor had the doctor examine the employee, and the doctor's report was that the employee was then in excellent health and could do the work easily.

Receiving this information, the supervisor talked with the employee and suggested that he go to work and do the job acceptably or quit. The employee then did the job acceptably and kept up with the production from other shifts.

The comments from the training class brought out the fact that the supervisor had taken plenty of time in dealing with the medically discharged serviceman, had done correctly in having the doctor's checkup, and that the results proved the wisdom of the action taken.

PROBLEM IV.

This problem involved two men. The first, whom we shall call "A", was 25 years old and was working on the second shift. He expected to be drafted into the Army within a short time.

The second man, "B", was 40 years old and worked on the first shift. Both men were excellent workers.

A asked the foreman to place him on the first shift until he received his draft notice from the Army. The foreman had no place for him on the first shift but suggested that he try to work up a swap with *B*.

A and *B* swapped jobs, and nothing was reported to the foreman as to how long the swap would continue or any other details of the agreement. At the end of two weeks, both men reported on the first shift for work.

The foreman talked to *A*, and the latter said that he was supposed to be on the first shift, and that the swap of jobs was supposed to last until he went into the Army. The foreman talked with *B*, and the latter said that he had swapped for "two weeks only."

New supervisors found that employees should be advised in advance of changes which affect them.

The foreman found out the approximate length of time that would ensue before *A* went into the Army. This was a very short time, and so the supervisor sold *B* on the idea of allowing the younger man to stay on the first shift until the Army authorities called him.

The comments made by training classes emphasized that employees should not be allowed to arrange their jobs in this haphazard fashion. The exchange of jobs should have been made before the foreman, and all the details agreed upon in his presence. In this way, misunderstandings which frequently cause employees to quit can be prevented.

PROBLEM V.

The employee was about 60 years old and had been working for the company 1½ years as a skilled head-overhauler. He was the oldest man in the department, surrounded by teen-age boys in whom he had taken a great deal of interest. In fact, the employee had personally trained many of the

(Continued on page 230)

A case study of one problem showed that the employee was guilty of unsafe practices in repairing electrical fixtures. The training class thought that the supervisor had been wrong in the action taken in this case.

Dry Chemicals Extinguish Textile LINT FIRES

HIGHLIGHTS: *Powder propelled by carbon dioxide into fan-shaped spray —Fifty cotton mills try out equipment—Quick control and lessened damage are advantages—Wet-extinguisher standby recommended—Performance of chemicals is called satisfactory.*

By R. G. SHEPHERD
Associated Factory Mutual Fire Insurance Companies

MODERN DRY-CHEMICAL extinguishers containing a special powder ejected by gas pressure have earned a place in textile mills as an effective means of controlling surface fires in textile fibers.

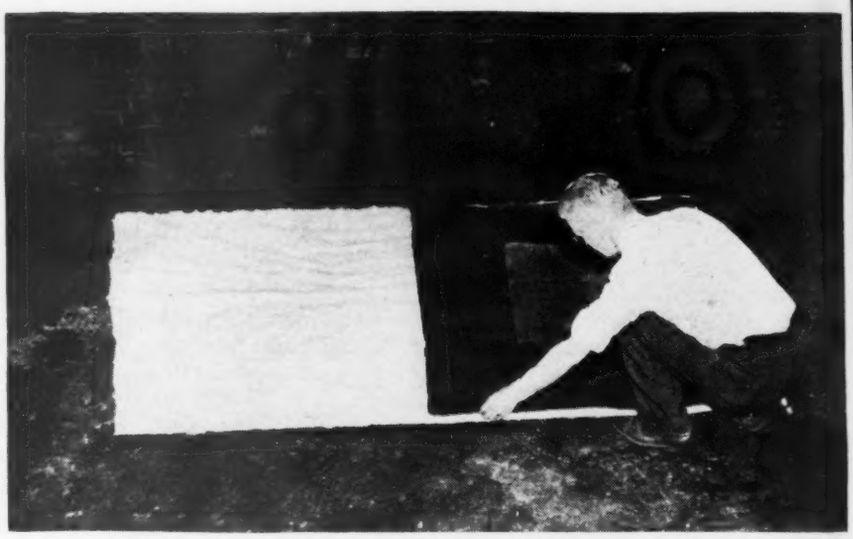
The extinguishers were subjected to a series of tests on cotton surface lint fires at the Factory Mutual Laboratories as a part of the regular program of research in methods of fire prevention and fire protection. They gave promising results which were subsequently substantiated by trial installations at about 50 cotton mills. Performance was watched over a six-month period during which employees used the extinguishers on actual mill fires, with the usual water-type extinguishers available in reserve. In the opinion of the management of these mills, as well as of Factory Mutual engineers, performance was very satisfactory.

CHARACTERISTICS. The special powder in the extinguishers is treated so that it will not absorb moisture and become caked. The powder will flow freely even under very humid conditions. It is not subject to freezing or evaporation.

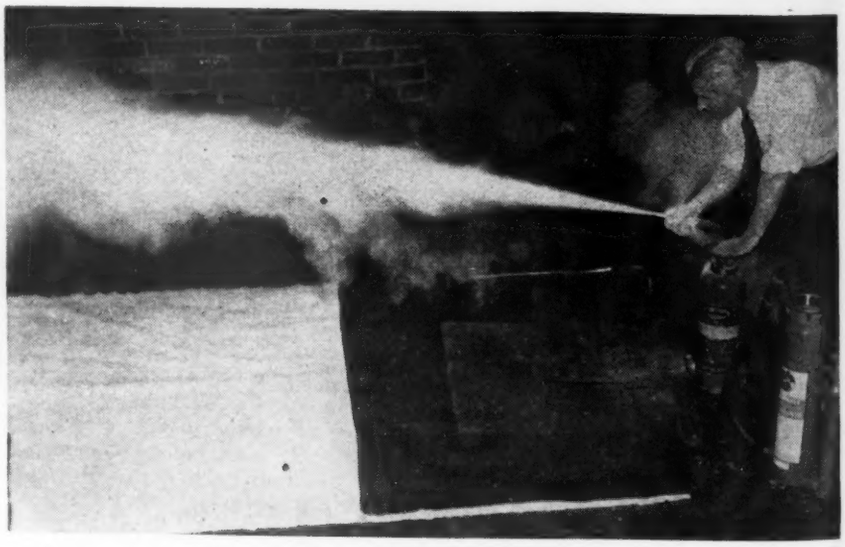
The units are available in 15-, 25-, 140-, and 300-lb. sizes. The 15-lb. size is recommended as being the most practical to handle in fighting cotton surface fires. Its capacity is ample for most situations.

The force for propelling the powder is provided by the release of carbon dioxide which builds up pressure in the main storage container. The 15-lb. unit will propel the powder a distance of about 18 ft. in a fan-shaped spray. The rate of application of powder may be controlled by the operator through a valved nozzle. With the nozzle held open, the discharge will last for 18 to 20 sec. This time appears short, but it is sufficient to cover about 3,000 sq. ft. of surface.

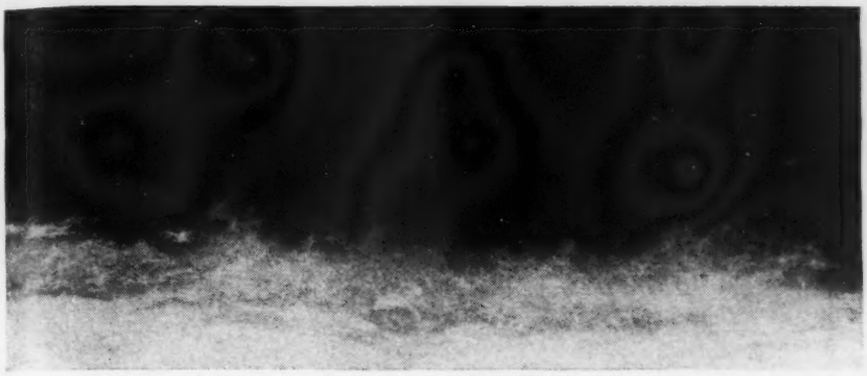
The extinguishing effect of dry chemical powder is due to a combination of properties. First and most important, the powder provides a fire-retardant coating on the fibers. Second, the heat of a fire causes the powder to liberate a certain amount of inert gas. Together these properties mean that a light deposit of powder will prevent



One-half of sheet of cotton batting is covered before application of dry powder.



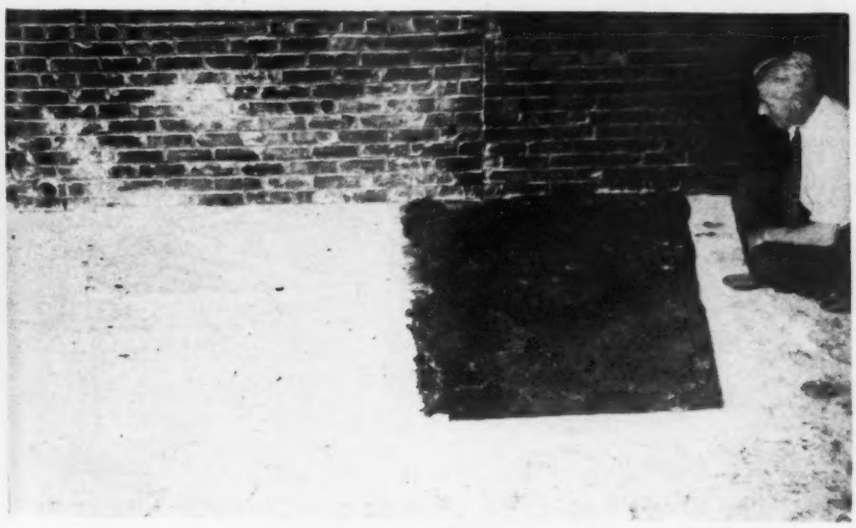
Dry chemical is applied with stream directed slightly upward. Powder settles down.



Surface fibers of cotton lint over which a fire will quickly flash. Rapid spread of lint fires necessitates control material which can cover a relatively large area quickly.

rapid flame spread on combustible lints and enable quick control of a surface fire. A small amount of water applied preferably in the form of fine spray—or when necessary by a solid stream—may then be used to stop any residual smoldering, such as after accompanies fires involving lint.

Covering is removed and untreated section is ignited with a match.



Fire stops at the section which was treated with the dry chemical powder.

APPLICATION. Dry powder is best applied by "area flooding." The powder stream should be directed at least three or four feet above the flame from a distance of eight or ten feet. By this procedure, the powder settles and provides a retardant coating on surrounding surface areas ahead of flash fires. After this application, attention can then be directed to the initial fire without danger of spreading the flame by blowing burning particles about.

Never direct the discharge from this extinguisher at the seat of blaze, as is the usual practice with a liquid-type extinguisher.

LIMITATIONS. Acceptance of dry chemical extinguishers for use in textile mills is for surface fires. The powder is not effective against a deep-seated or burrowing fire. Extinguishers having a wetting action should be immediately available to supplement the dry chemical. They will be needed for complete extinguishment of sub-surface fires or residual smoldering of burning lint.

For opening or picking areas, heavy-duty twister rooms, roving frames, jacquard looms, and spinning frames, small hoses with spray nozzles should be provided in addition to dry-chemical extinguishers. For carding, weaving, beaming, and for departments where lint surfaces are usually small and not continuous, pump tanks or, in some instances, water pails will be found to be adequate.

The greatest advantage of dry chemical is the speed with which an operator can cover an extensive area with a single extinguisher. Limiting flash fires to small areas also minimizes the number of sprinklers likely to open and decreases the need for use of larger amounts of water by fire fighters. This control is an important factor, since water damage is frequently greater than the actual fire damage.

Dry chemical powder used has no abrasive or corrosive action on bearings or metal surfaces. The powder will not injure stock even though the materials may be dyed or partially finished. It is not harmful to skin or clothing. These various features make it possible to get back into production faster after a fire has been extinguished.

Location and number of extinguishers depend a great deal on room characteristics and general housekeeping conditions. Average-size opener and picker rooms would usually require two 15-lb. extinguishers. In other departments enough extinguishers should be provided so that one may be located within 75 ft. of each operation or machine.

TRICOT Requires Careful WARPING

HIGHLIGHTS: *Proper handling of filament yarns in twisting enhances the warping characteristics—Frequent inspections of yarn, spools, bobbins, and cones are necessary in both twisting and warping—New rod-type tension control permits mill to vary warper-creel snubbing action on 10 yarn holders simultaneously.*

By O. B. GRAHAM

THE SWING TO TRICOT FABRICS, enhanced by the greater production claimed for the new high-speed machines, has not altered one of the important factors of successful tricot operation. Careful warp preparation is still a prime requirement if tricot equipment is to be operated properly and if high-quality fabrics are to be knitted.

The methods of preparing tricot warps depend upon the physical setup of the mill. Some mills purchase all their warp spools and thus avoid entirely the task of preparing the yarns for tricot. Other mills may be both yarn producers and knitters, with the necessity for complete preparation of yarns into tricot warps.

Most mills, however, are knitters only and must either purchase finished warps or else do their own warping from cones. At the present time, it is not uncommon to find both cones and warps purchased by the knitter because of such factors as yarn supply, expected quality from a specific source, and styling demands.

NEW METHODS. Regardless of the particular setup, there are well-accepted methods of handling the bobbins, cones, or spools from which tricot warps are made; and these methods should be emphasized if maximum production and quality are to be expected from tricot knitting. In addition, there are some new features in warping equipment which have been installed and which operate to the advantage of the mills.

Proper handling of filament yarns begins, in one particular mill, with the twisting operation itself, so that broken filaments, dirt, grease, and other detractions from quality may be avoided. In this plant, inspections are made of empty bobbins, in-process bobbins (i.e., actually running on the twister), and finished bobbins.

In the case of specially designed bobbins, which carry "pigtails" wrapped around the base of the bobbin, a special inspection must be made. Since these pigtails are later to be tied in the magazine creel of the warper, they must be perfect, so that when the first bobbin of yarn empties, the second bobbin of yarn proceeds without interruption.

Other factors gaged by twister and warper inspection are:

1. Yarn lay on the bobbin (to prevent sloughs).
2. Low-quality yarn or faulty workmanship.
3. Bobbins which do not run clean in the warping process. (Such bobbins are withdrawn from production and given a through polishing to remove rough places. The surfaces of bobbins must be kept smooth at all times.)

CREELS. One particular mill uses two types of inside-sheet warper creels. One type has 20 posts per side with 10 positions (or cone holders) per post, and is generally used for fine-denier yarns. Other creels have 17 posts per side with 12 yarn positions per post.

All the creels mentioned are equipped with automatic stop motions either with the light indicator at each post or with the central-board indicator in front of the creel. In connection with creel stop motions, the electrical-contact points must be free of dirt and

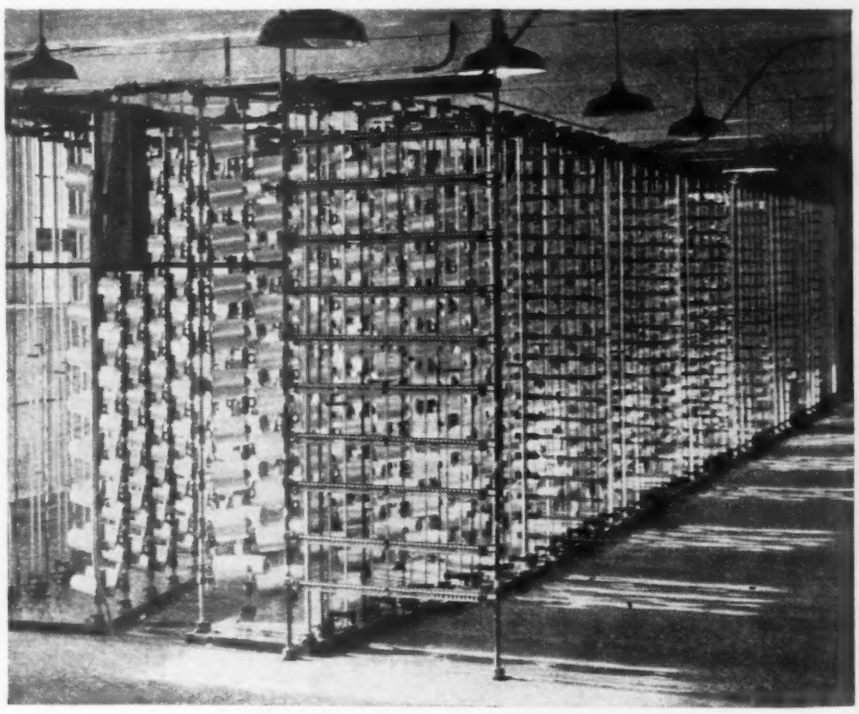


Fig. 1. The above magazine cone creel is typical of the creels used by mills to warp spools for tricot machines. This creel also contains the new rod tension.

Fig. 1, 2 and 3 courtesy Cocker Machine & Foundry Co.

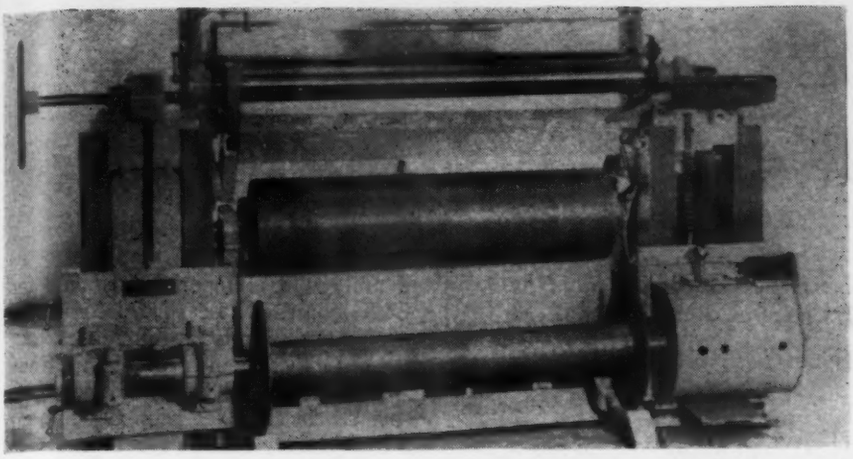


Fig. 2. Tricot warp spools are heavy and are lowered to the floor for doffing, as shown in the photograph above. Some mills report the use of magnesium spools instead of the usual pressed-steel type, and the former's lightness is said to reduce handling and shipping costs.

lint for proper operation; and in some cases, these points should be replaced with noncorrosive silver.

Two systems of tension control are used on warpers, but the traditional washer-type tension is in place on most equipment. This system requires manual placement of washers on individual yarn holders and a constant rearrangement of the size and weights when different tensions are desired.

However, the new rod-type tension control is also used by some mills; and this system permits simultaneous control of all yarn holders or positions on the rod. The rod tension is shown in Fig. 3. As illustrated in A, the rod may be turned or revolved by means of the tension indicator. Thus, greater or lesser snubbing action can be obtained on all yarn positions simultaneously, because when the rod moves through the arc, the yarn holders also move. The amount of tension obtained depends upon where the indicator is set; if no washers are used and the rod is straight, there is practically no tension. Tensions heavy enough for 1200-den. yarns represent approxi-

(Continued on page 204)

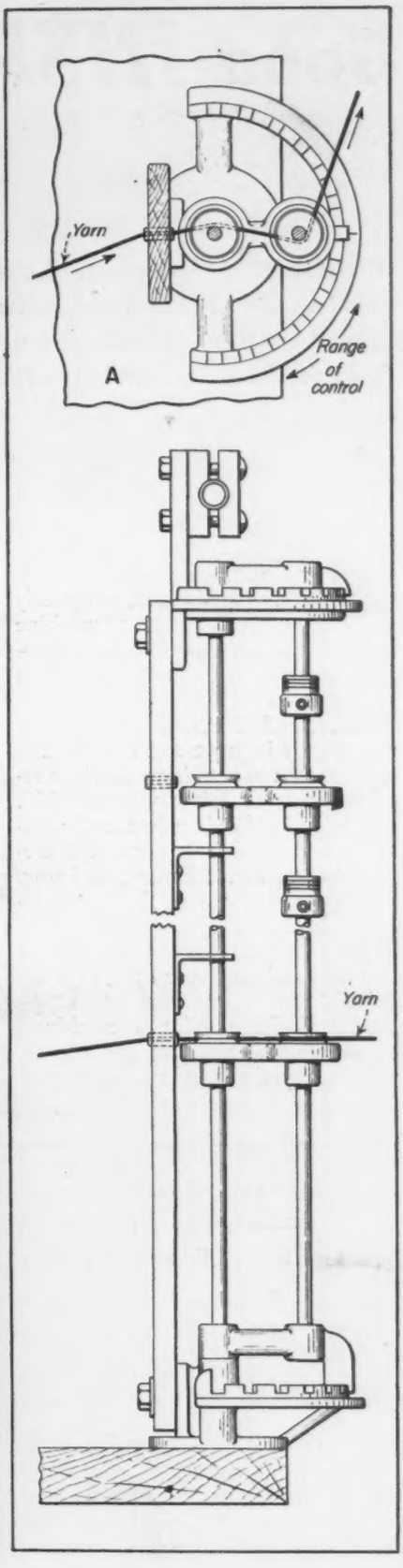


Fig. 3. This drawing (right) shows the new rod-type tension described by the author as giving control of the tension on all cone holders at one time. By revolving the post through the range of control shown in A, the mill obtains tensions from practically zero (if no washer is used) to an extremely heavy tension such as that used for 1200-den. yarns. Various combinations of washers may also be used with the rod-type tension, in order to obtain a wide range of tensions, but a No. 6 washer is generally used for tricot yarns.

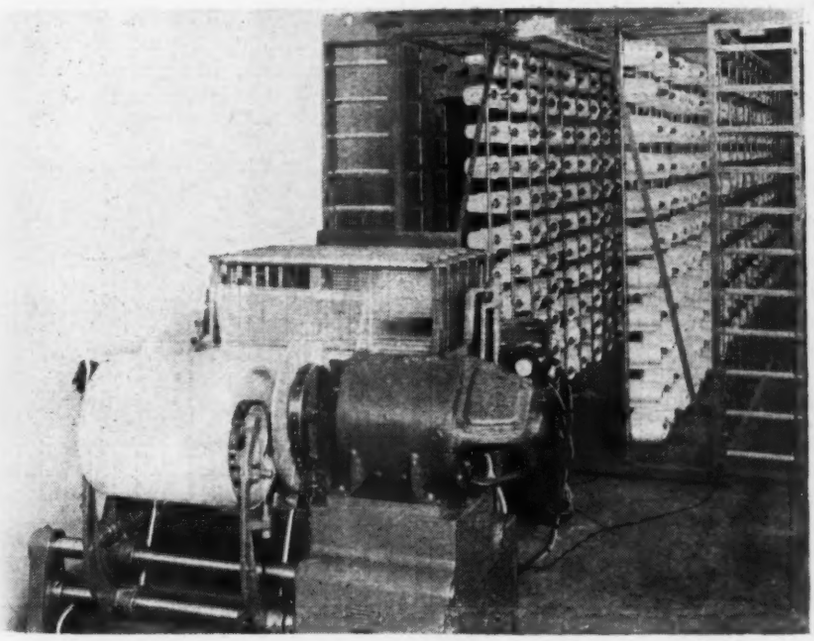


Fig. 4. Tricot warping must be accurate and free from unnecessary stoppages if smooth-running warps are desired. Above photo shows another type of cone creel and the collecting eyeboard behind the warper head. Small rolls back of fan comb are used for "storing" yarn when backing up spool to repair an end. Courtesy Robert Reiner, Inc.

Good INSPECTION FORMS Aid Loom Maintenance

HIGHLIGHTS: *Thoroughness of machine inspections is increased by using effective inspection forms—Inspectors must have thorough practical knowledge of machines—Demerit system provides basis for judging progress—Forms developed for elevators and houses.*

By FRANK L. BYRD

Superintendent of Weaving Maintenance, Dan River Mills

EFFECTIVE FORMS for machinery inspection, properly used, can greatly increase the thoroughness of machine maintenance. In the maintenance program at Dan River Mills, the forms illustrated on this and following pages are used, and it has been found that they greatly improve and simplify the problem of upkeep. Two previous articles (TEXTILE WORLD, June, 1946, and July, 1946) described and illustrated the inspection forms for preparatory, roving, spinning, twisting, winding, warping, and slashing processes. In this article, the forms for weaving and cloth-room equipment, elevators, and employee houses are described.

Barber-Colman tying-in machines, both the portable and stationary types, are given periodic scheduled inspections, using the form shown in Fig. 1. The precision action required of these machines definitely justifies a thorough inspection in order to gain good performance. The form is designed to care for 11 groups of major parts, along with auxiliary parts such as motor, fan, waste can, and carriage bases. General cleaning is also covered. The methods used are in the usual pattern followed on other equipment, with no part being neglected.

LOOMS. Two makes and 15 types of looms have caused the inspection forms for these machines to be spread over more space than those for other equipment. The forms, Figs. 2, 3, 4, 5, and 6, are divided into Parts 1, 2, and 3. Part 1 is applicable to all types of looms. There are separate Parts 2 and 3 for Draper looms and for C&K looms. These special forms are necessary due to loom differences.

On Draper loom forms, 14 motions are listed and all the usual parts are covered by the legend. C&K loom forms provide listings for 17 motions or groups, with legend to cover all the parts and increase the efficiency of the inspector.

In carrying out the loom inspection, the following parts are checked with the loom running: girts, cloth-roll stand, harness rolls and sheaves, harness straps and screws, pick counter, whip-roll arm and bearings, vibrator arm and cam, breast beam, crankshaft gears and bearings, camshaft gears and bearings, rocker-shaft bearings, warp stop motion, dobby head, dobby chain and chain motion, and box motion.

The following parts are inspected with the loom stopped: harness cams and treadles, tape-selvage motion, cloth-roll racks, loom arch, let-off motion, take-up motion, take-up roll and roll covering, all gears and bearings, filling-stop motion, battery and transfer motion, all shafts, warp-stop-motion adjustment, temples, dobby-head adjustments, box motion, magazine, and shuttle-change motion.

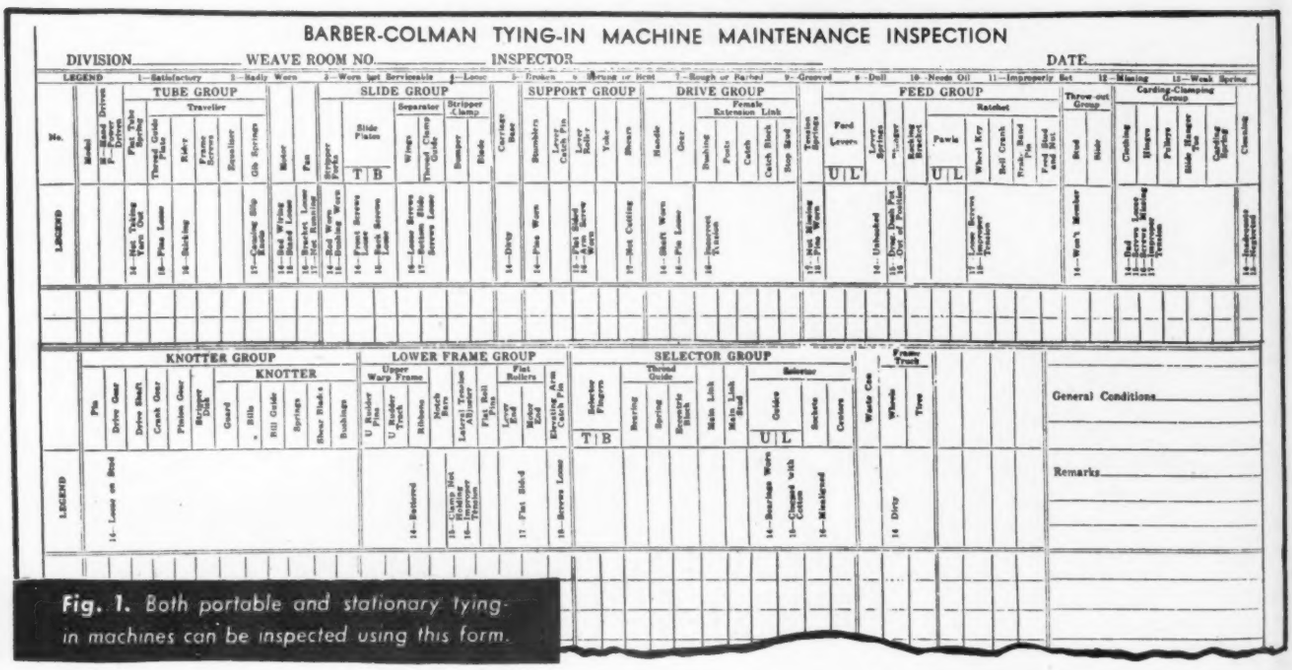
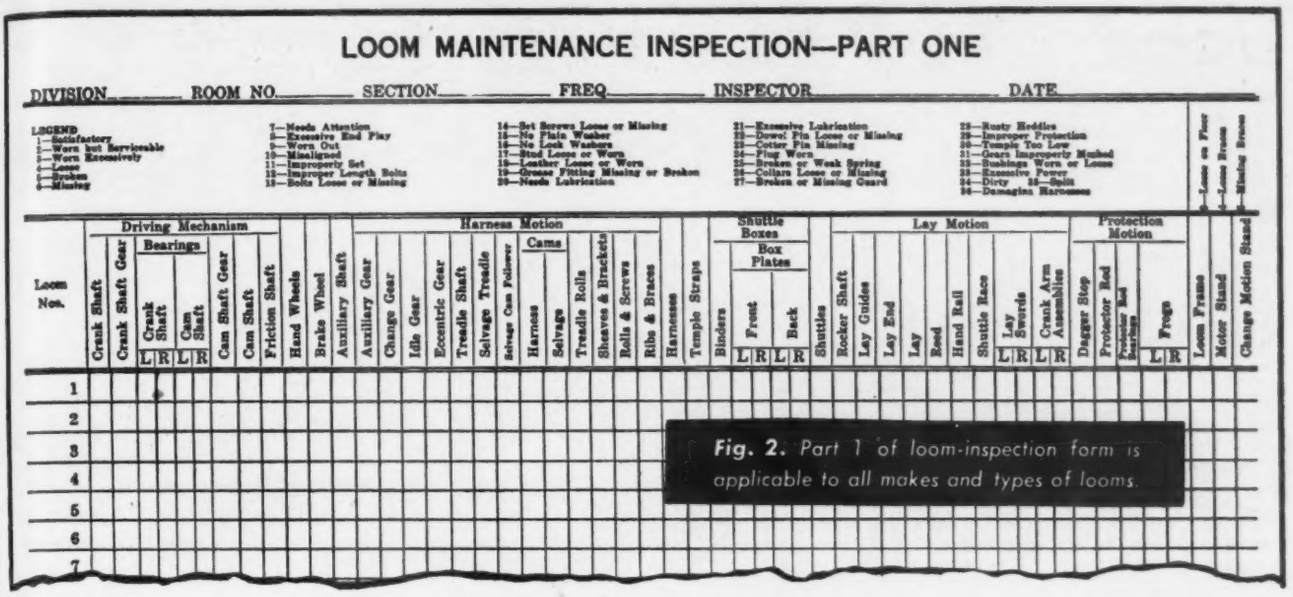


Fig. 1. *Both portable and stationary tying-in machines can be inspected using this form.*


LOOM MAINTENANCE INSPECTION—PART ONE

DIVISION ROOM NO. SECTION FREQ INSPECTOR DATE

LEGEND
1—Satisfactory
2—Worn but Serviceable
3—Worn Excessively
4—Loose
5—Broken
6—Missing
7—Needs Attention
8—Excessive End Play
9—Worn Out
10—Misaligned
11—Improperly Set
12—Improper Length Bolts
13—Bolts Loose or Missing
14—Set Screws Loose or Missing
15—No Plain Washer
16—No Lock Washers
17—Stud Loose or Worn
18—Leather Loose or Worn
19—Grease Fitting Missing or Broken
20—Needs Lubrication
21—Excessive Lubrication
22—Dowel Pin Loose or Missing
23—Cotter Pin Missing
24—Ping Worn
25—Broken or Weak Spring
26—Collars Loose or Missing
27—Broken or Missing Guard
28—Rusty Heddles
29—Improper Projection
30—Temple Too Low
31—Gears Improperly Meshed
32—Bushings Worn or Loose
33—Excessive Power
34—Dirty 35—Split
36—Damaging Harnesses
L—Loose on Floor
K—Knee Broken
M—Missing Broken

Driving Mechanism: Crank Shaft; Crank Shaft Gear; Bearings (Crank Shaft L R, Cam Shaft L R); Cam Shaft Gear; Cam Shaft; Friction Shaft; Hand Wheels; Brake Wheel; Auxiliary Shaft
Harness Motion: Auxiliary Gear; Change Gear; Idle Gear; Eccentric Gear; Treadle Shaft; Selvage Treadle; Selvage Cam Follower; Cams (Harness, Selvage); Treadle Rolls; Sheaves & Brackets; Rolls & Screws; Rib & Braces; Harnesses; Temple Straps
Shuttle Boxes: Binders; Box Plates (Front L R, Back L R); Shuttles
Lay Motion: Rocker Shaft; Lay Guides; Lay End; Lay; Reed; Hand Rail; Shuttle Race; Lay Swords L R; Crank Arm Assemblies L R
Protection Motion: Dagger Stop; Protector Rod; Protector Rod Bushings L R; Frogs
Loom Frame; Motor Stand; Change Motion Stand

Loom Nos. 1 2 3 4 5 6 7

Fig. 2. Part 1 of loom-inspection form is applicable to all makes and types of looms.

CLOTH ROOMS. The form for cloth rooms, as shown in Fig. 7, covers mechanical inspection tables and folders, both of which are provided for in the legend at the top of the form. Twenty individual items are listed, but other parts that are not included on the face of the form are equally recognized if they are found to need attention.

Dye-house and finishing equipment forms have not yet been worked out due to the small number of these machines used. However, this machinery is given a close inspection on a regular 4-month schedule, and a factual report is written out and delivered to the mill superintendent as well as to the proper maintenance superintendent.

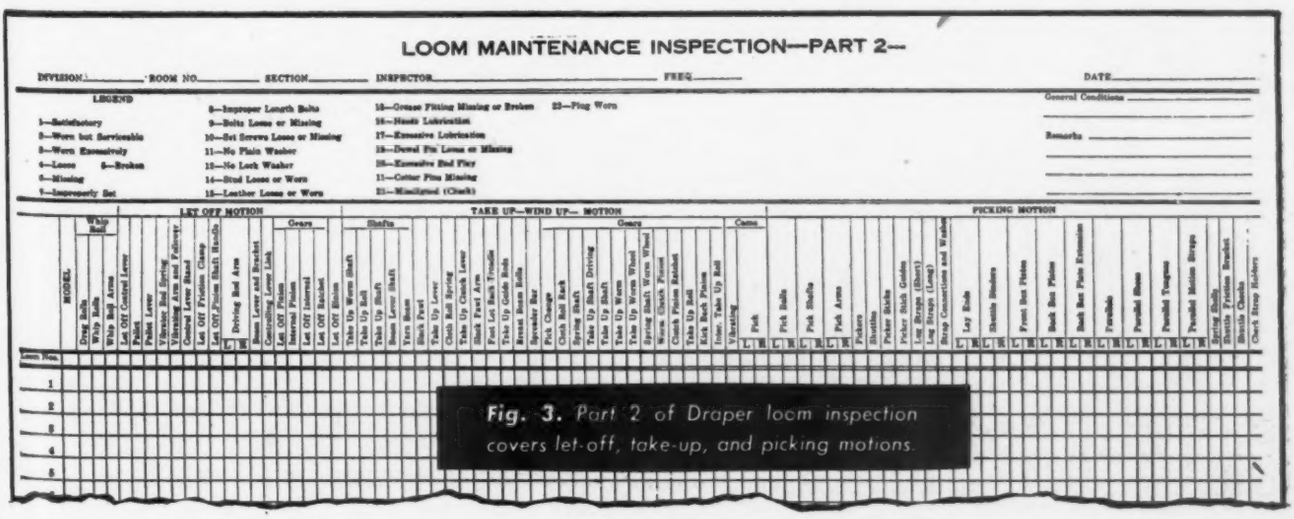
Elevators, being important service machines, are inspected on a bimonthly schedule. Fig. 8 is a form for elevators and includes those defects that have been found to occur from time to time. One copy of this form is used for the inspection of each elevator in order to give a comparison by demerits. Thoroughness is emphasized again on these machines.

Machinery and electrical equipment are not the only items inspected. The house-inspection report, Fig. 9, illustrates how these units are cared for in order to help maintain them in a livable condition.

DEMERITS. A system of demerits has been worked out for each type of equipment in order to show comparative conditions between mills, rooms, departments, and divisions. On opening, picking, carding, and weaving equipment, this is done on individual machines. On drawing frames, roving frames, spinning frames, twisters, spoolers, and winders, the demerits are rendered on a per-spindle, or per-delivery basis. Demerits are not applied as a generality, as will be seen from the following small sample of the demerit system for roving frames.

Defect:	*Demerits:*
TOP ROLLS AND WEIGHTING—	
dirty	5
dry arbors	25
worn saddles	10
SPINDLES—	
loose or tight gears	5
steps need oiling	25
slots clogged	10
tops broken (per spindle)	3
worn	10
hot	5
worn badly	10
loose	10

SUMMARY. Specialists appointed to do inspection work must have a thorough understanding of the various pieces of equipment on which they are assigned to work. To be able to record the pertinent facts in such a way that a true picture of mechanical condition is given, an inspector usually requires a background of several years practical experience in operating and fixing the machines, plus supplementary training in inspection methods. Reports are supposed to be true in every detail before leaving


LOOM MAINTENANCE INSPECTION—PART 2—

DIVISION ROOM NO. SECTION INSPECTOR FREQ DATE

LEGEND
1—Satisfactory
2—Worn but Serviceable
3—Worn Excessively
4—Loose
5—Broken
6—Missing
7—Improperly Set
8—Improper Length Bolts
9—Bolts Loose or Missing
10—Set Screws Loose or Missing
11—No Plain Washer
12—No Lock Washer
14—Stud Loose or Worn
15—Leather Loose or Worn
16—Grease Fitting Missing or Broken
17—Excessive Lubrication
18—Dowel Pin Loose or Missing
19—Excessive End Play
21—Misaligned (Check)
22—Ping Worn

General Conditions
Remarks

LET OFF MOTION: Whip Roll (Drag Rolls, Whip Rolls, Whip Roll Arms); Let Off Control Lever; Pallet; Pallet Lever; Tension End Spring; Tension Arm and Follower; Change End Gear; Let Off Friction Clamp; Let Off Friction Shaft Handle; Driving Rod Arm (L R); Beam Lever and Bracket; Connecting Lever Link; Let Off Pinion; Internal Pinion; Let Off Internal; Let Off Ratchet; Let Off Pinion
TAKE UP—WIND UP— MOTION: Shafts (Take Up Worm Shaft, Take Up Roll, Take Up Shaft, Beam Lever Shaft, Yarn Beam); Gears (Black Pawl, Take Up Lever, Chain Roll Spring, Take Up Check Lever, Black Pawl Arm, Front Lat Bank Treadle, Take Up Guide Rods, Breast Beam Rods, Spreader Bar, Pick Change, Cloth Roll Rack, Spring Shaft, Take Up Shaft Driving, Take Up Shaft, Take Up Worm, Take Up Worm Wheel, Spring Shaft Worm Wheel, Worm Check Pinion, Check Pinion Ratchet, Take Up Roll, Kick Back Pinion, Inner Take Up Roll, Threading); Cams (Pick)
PICKING MOTION: Pick Balls; Pick Shafts; Pick Arms; Pickers; Shuttles; Picker Sticks Guides; Picker Sticks (Short); Lug Straps (Long); Strap Connections and Washers; Lay Ends; Shuttle Binders; Front Box Plates; Back Box Plate; Back Box Plate Extension; Frontlets; Backlets; Parallel Rods; Parallel Tongues; Parallel Tongue Straps; Parallel Motion Straps; Spring Shafts; Shuttle Friction Bracket; Shuttle Checks; Check Strap Rockers

Loom Nos. 1 2 3 4 5

Fig. 3. Part 2 of Draper loom inspection covers let-off, take-up, and picking motions.

LOOM MAINTENANCE INSPECTION—PART 3

DIVISION____ ROOM NO.____ SECTION____ INSPECTOR____ FREQUENCY____

1. Satisfactory
2. Worn but Serviceable
3. Worn Excessively
4. Loose
5. Broken
6. Missing
7. Needs Attention
8. Worn Out
9. Too Low
10. Misaligned
11. Improperly Set
12. Improper Length Bolts
13. Bolts Loose or Missing
14. Set Screws Loose or Missing
15. No Plain Washer
16. No Lock Washer
17. Stud Loose or Worn
18. Cork Inserts Bad *(Brakes)*
19. Damaging Cloth *(Temples)*
20. Needs Lubrication
21. Excessive Lubrication
22. Dowel Pin Loose or Missing
23. Cotter Pin Missing
24. Pins Loose *(Filling Motion)*
25. Broken or Weak Spring
26. Collars Loose or Missing
27. Broken or Missing Guard
28. Doesn't Work Properly (Th…
29. Improper Protection
30. Dirty 31. Split

Loom Nos.	FRAME: Loom Sides L	R	Spreaders	Back Girts L	R	Arch	Middle Girts F	B	Front Girts L	R	Center Sampson	Stafford Thread Cutter	TEMPLES: Cases — Housing L	R	Burrs L	R	Shells (Caps) L	R	Cutter	TRANSFERRER AND BATTERY: Filling: Feeler	Feeler Tip	Fork Hook	Feed Pawl	Hold Back Pawl	Shuttle Feeler Protection	Hammer	Studs	Fork	Latch Finger	Top Holder Arm	Thread Guides	Bobbin: Disc	Support Spring	Holders	Supports	Guides	STOP MOTIONS: Warp: Knock Off: Bunter	Rod	Stand	Lever	Oscillator: Cam	Cam Follower Guide	Rod Head	Filling: Starting: Rod	Rod Spring	Rod Bearing	Filling: Cam Follower Hub	Motion Hook	Fork Slide	Fork Grate	BRA…ES: Shoes U	P	Shoe Bracket	Shoe Studs	Cam	Cam Bracket	Cam Stud	Rod	Rod Spring
1																																																												
2																																																												
3																																																												
4																																																												
5																																																												

Fig. 4. Part 3 Draper loom inspection covers vital parts which must not be overlooked.

C. & K. LOOM MAINTENANCE INSPECTION---PART 2---

DIVISION____ ROOM NO.____ SECTION____ INSPECTOR____ FREQ.____

LEGEND

1—Satisfactory
2—Worn but Serviceable
3—Worn Excessively
4—Loose
5—Broken
6—Missing
7—Needs Attention
8—Excessive End Play
9—Worn Out
10—Misaligned
11—Improperly Set
12—Improper Length Bolts
13—Bolts Loose or Missing
14—Set Screws Loose or Missing
15—No Plain Washer
16—No Lock Washers
17—Stud Loose or Worn
18—Leather Loose or Worn
19—Grease Fitting Missing or Broken
20—Needs Lubrication
21—Excessive Lubrication
22—Dowel Pin Loose or Missing
23—Cotter Pin Missing
24—Plug Worn
25—Broken or Weak Spring
26—Collars Loose or Missing
27—Broken or Missing Guard
28—Rusty Heddles
29—Improper Protection
30—Temple Too Low

LOOM NOS.	WHIP ROLL: Warp Rail	Warp Rail Arm	Spring Rod	Spring Rod—Spring	Friction Levers	LET OFF MOTION: Push & Ratchet Pawl	Rope Ratchet Wheel	Beam Locks—Poppet	Ratchet	Spur Gears	Beam Ratchet Pawl	Ratchet Lever	Beam Bands	Bearings	Weight Lever: Stands L	R	TAKE UP MOTION: Beams: Wooden Breast	Iron Breast	Gears: Cloth Roll	Take Up	Ratchet	Laysword Stand	Take Up Bracket	Pawls: Rocker	Hold	Pull	Arms: Hold Up Pawl	Rocker Pawl	Foot Lever Shaft	Levers: Foot	Shipper	Studs: Arch Angle	Angle Lever	Hold Pawl Arm	Winding Roll Bearing	Take Up Worm	Worm Crank	Pressure Roll	Cloth Roll Fillet	Take Up Guide Roll	Shafts: Worm	Winding Up Roll	Winding Up Roll	Slide Reverse Key	PICKING M…: Cams: Check Point	Pick or Ball Wing L	R	Pick Ball or Roller L	R	Pick Shaft and Shoes L	R	Pick Lug Holders L	R	Lug Straps: Long	Short	Picking Shaft Stops	Parallels L	R	Power Straps L	R	Parallel: Shoes	Tongues	Motion Straps L	R	Swivel: Spring Strike L	R
1																																																																			
2																																																																			
3																																																																			
4																																																																			
5																																																																			

Fig. 5. Part 2 of C & K loom inspection is arranged for rapid, thorough inspection, due to arrangement of items on the form.

C. & K. LOOM MAINTENANCE INSPECTION (WITH DOBBY MOTION)---PART 3

DIVISION____ ROOM NO.____ SECTION____ INSPECTOR____ FREQ.____

1—Satisfactory
2—Worn but Serviceable
3—Worn Excessively
4—Loose
5—Broken
6—Missing
7—Needs Attention
8—Excessive End Play
9—Worn Out
10—Misaligned
11—Improperly Set
12—Improper Length Bolts
13—Bolts Loose or Missing
14—Set Screws Loose or Missing
15—No Plain Washer
16—No Lock Washers
17—Stud Loose or Worn
18—Cork Inserts Bad (Brakes)
19—Damaging Cloth (Temples)
20—Needs Lubrication
21—Excessive Lubrication
22—Dowel Pin Loose or Missing
23—Cotter Pin Missing
24—Pins Loose
25—Broken or Weak Spring
26—Collars Loose or Missing
27—Broken or Missing Guard
28—Not Holding
29—Improper Protection
30—Too Low
31—Gears Improperly Meshed
32—Bushings Worn or Loose
33—Wrong
34—Loose Braces
35—Excessive Yarn on Quill
36—Skinning Quill
37—Dull Knives (Thread Cutter)
38—Guard Improperly Set
39—Doesn't Work Properly (Thread Cutter)
40—Dirty
41—Split

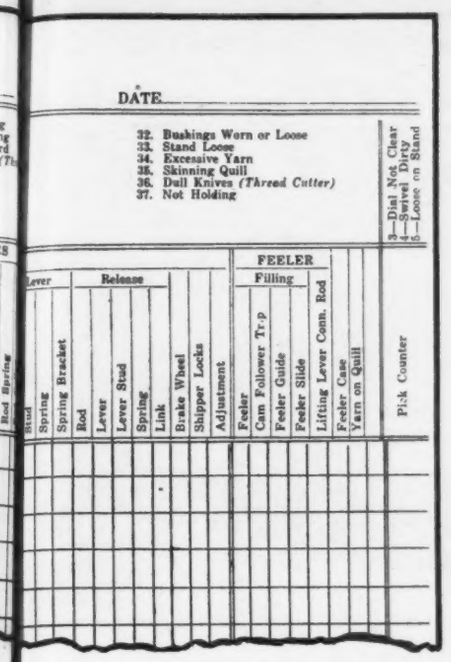
	FRAME: Loom Sides L	R	Arch F	B	Breast Beam Plate	Stands	Girts: Lower Front	Lower Back	No. 10 or 1511 Thread Cutter	TEMPLES: Cutter	Cases—Housing L	R	Burrs L	R	Shells (Caps) L	R	TRANSFERRER: Hammer	Studs	Lay Bunter	Latch Finger	Latch	Thread Guides	MAGAZINE: Indicating Finger	Upright Slides	Transferrer Shaft	Bobbin: Cradles	Give Way	Frame: Inside	Outside	DOBBY MECHANISM: Gears: Dobby	Worms	Girts	Jacks	Jack Lever	Hooks	Drive Rod and Swivels	Top Rack	Rack Cap	Middle and Bottom Racks	Evener	Rocker Arms	Dobby Knives	Knife Connectors	Horizontal Stand	Cylinder Shafts and Brgs.	Sleeve Clutch	Clutch Lifter Rod	Clutch Shaft	FEELER: Filling Cam Trip	Wipe	Slide	Lever Connecting Rod	Case	STOP MO…: WARP: Knock-Off: Bunter	Rod	Latch	T Lever	Stand	Straddle Fork	Half Moon	Oscillator: Cam	Cam Follower Guide
1																																																														
2																																																														
3																																																														
4																																																														
5																																																														

Fig. 6. Part 3 of C & K loom inspection covers dobby motion in addition to loom parts.

the inspector's hands. Good judgment is necessary in order not to render a report that might show a run-down condition unfoundedly.

A question may arise in the minds of some as to the justification for the system which has been described. However, a trial should prove to any mill that the expenditure will pay oft many times, whether the mill be mammoth or midget.

It is not claimed that this inspection system is a cure-all or a crutch for the maintenance program. It is, however, a valuable tool that can be used to great advantage and is one that can be developed by a mill's own personnel and talent.

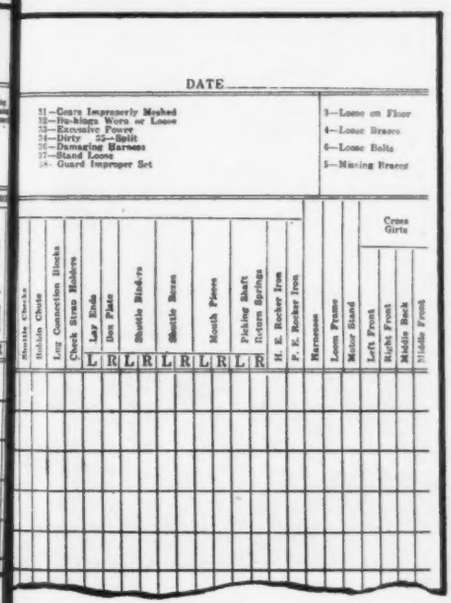

DATE

32. Bushings Worn or Loose
33. Stand Loose
34. Excessive Yarn
35. Skinning Quill
36. Dull Knives (Thread Cutter)
37. Not Holding

3—Dial Not Clear
4—Swivel Dirty
5—Loose on Stand

FEELER

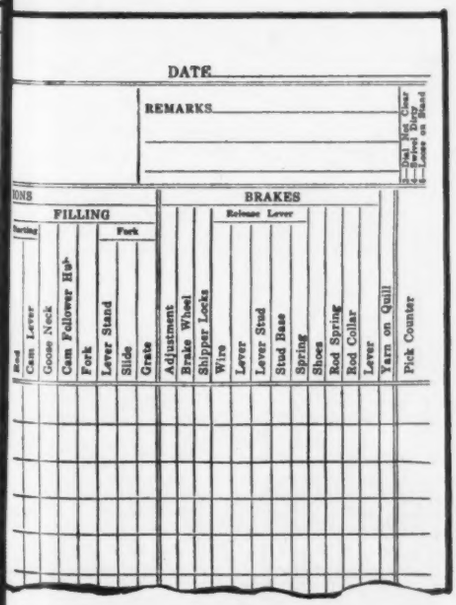
Lever | Release | Filling | Pick Counter


DATE

31—Gears Improperly Meshed
32—Hubs Worn or Loose
33—Excessive Power
34—Dirty 52—Split
35—Damaging Harness
37—Stand Loose
38—Guard Improper Set

3—Loose on Floor
4—Loose Braces
6—Loose Bolts
5—Missing Braces

Cross Girts


DATE

REMARKS

Dial Not Clear
Swivel Dirty
Loose on Stand

FILLING | BRAKES

Release Lever

Fork

INSPECTION TABLES AND FOLDERS

Div.____ Mill No.____ Dept.____ Date____ Inspector____

1. Loose
2. Missing
3. Worn
4. Worn out
5. Broken
6. Needs lubrication
7. Excessive lubrication
8. Improperly adjusted
9. Bent
10. Weak spring
11. Oil holes clogged
12. Waste wrapped
13. Dirty
14. Needs attention
15. Roll cover bad
16. Guard loose
17. Misaligned

Machine No.	Table top	Clock	Pedal	Clutch	Shipper	Shipper handle	Pulley: Drive	Pulley: Idler	Belt	Press roll	Carrier rolls: F	Carrier rolls: B	Carrier rolls: T	Cradle	Cradle rolls	Folder: Blades	Folder: Arm	Gear	Cylinder	Bearings				General condition

Fig. 7. Cloth-room inspection tables and folders can be inspected using this form.

ELEVATOR INSPECTION

To: _____ Date _____

From: _____ Machinery Inspection _____

Div.____ Mill No.____ Elevator No.____ Inspector _____

	Demerits		*Demerits*
....Water in pit	15	....Pit dirty	10
....Cage dirty	10	....Cage floor badly worn	20
....Cage gate broken	25	....Cage gate track broken	25
....Door to shaft open	100	....Door safety switch broken	50
....Door glass broken	10	....Pent house stairs or ladder needs attention	10
....Light out in pent house	5	....Drive belt off center of pulley	20
....Drive belt dragging	15	....Cable rusty	10
....Drive pulley noisy	10	....Drive pulley needs attention	10
....Brake drum grooved	10	....Auto. leveler not functioning	10
....Cable dry	10	....Tracks need attention	5
....Cable wires broken	10	**Total Demerits**	
....Bell out of order	10		

Remarks:

Fig. 8. Safe elevators are assured if this form is followed. Demerits are incorporated right on the form.

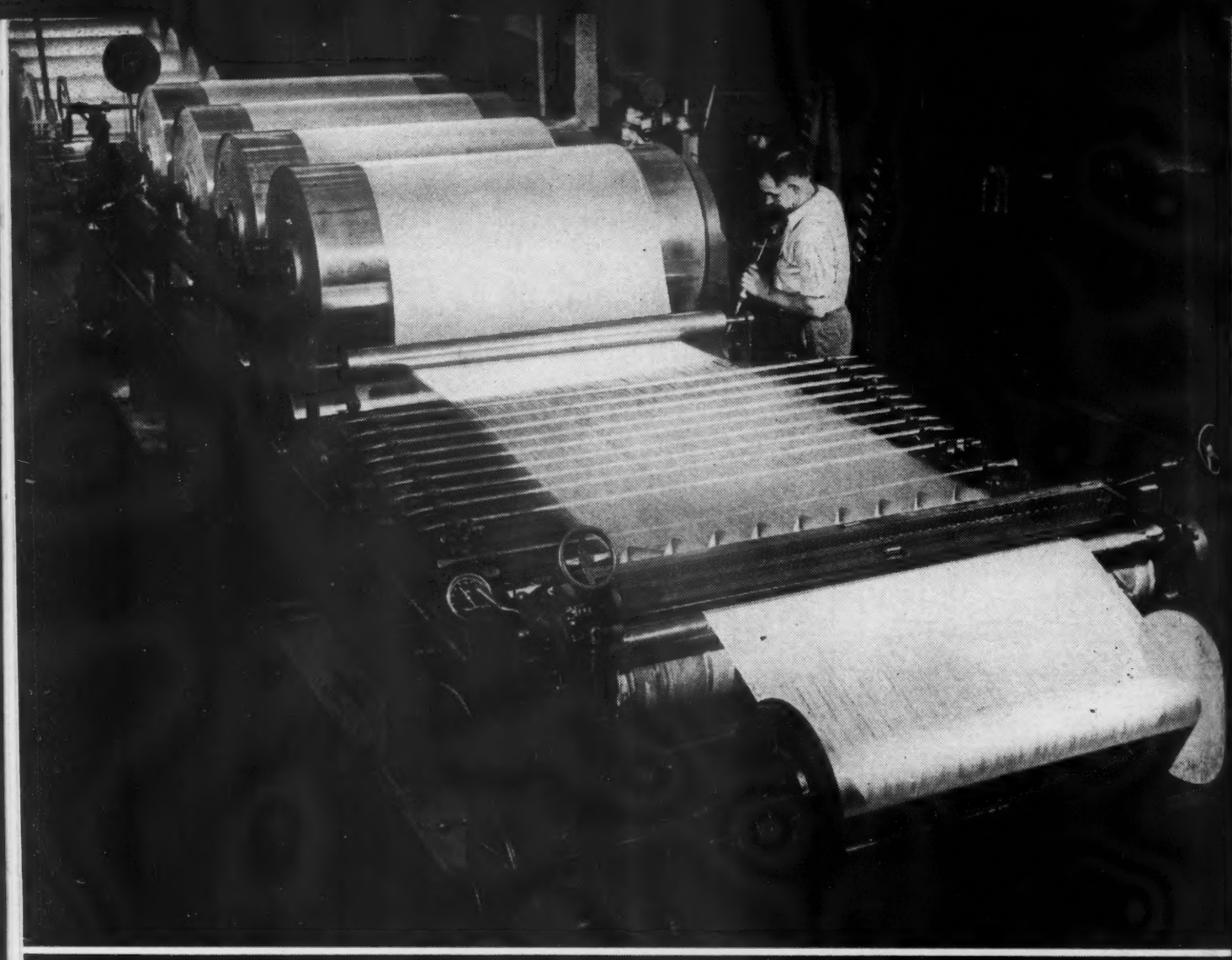
MAINTENANCE INSPECTION (Houses)

Inspector _____ Date _____

1. Satisfactory
2. Needs attention
3. Falling out
4. Sagging
5. Rotted
6. Worn
7. Worn badly
8. Needs paint
9. Needs paint badly
10. Needs patching
11. Repairs needed badly
12. Extensive repairs needed
13. Glass broken
14. Missing
15. Cracked or falling
16. Improper drains
17. Privy needs cleaning
18. Dangerous

Address	Foundation	Chimney	Sills or Joists	Floors	Plaster	Interior Walls	Windows	Doors and Door Frames	Porches and Steps	Roof	Gutters and Drains	Wiring	Plumbing	Privy	Screens	Exterior Paint	Stucco

Fig. 9. Periodic inspections help keep employees' homes in good condition.



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SUN TEXTILE LUBRICANT...

Ends Problem of High Grease-Consumption in Eastern Mill

Grease-costs were cut in half; maintenance-procedures were simplified and reduced, when a Sun Engineer tackled the lubrication problems of this big eastern mill.

Excess feeding of lubricant had been their experience before using Sun products . . . equipment was not being efficiently lubricated.

Waste stopped and adequate protection of bearings was assured when the Sun Engineer recommended a Sun grease specially prepared by Sun for the particular conditions of operation.

Sun Engineers often have the answer to tough lubrication and processing problems in textile mills, help to cut maintenance-costs, speed-up production, eliminate delays and shut-downs.

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INDUSTRIAL PRODUCTS

LABORATORY CONTROLS
Rayon Piece Goods Finishing

HIGHLIGHTS: *Well-equipped, competently staffed laboratory should be key department of plant—Two important functions are determination of fibers in cloth and type of size present—Laboratory supervision of dye-house formulas and processes increases uniformity of product—Finishing materials and processes must be carefully selected to meet customer's requirements as economically as possible.*

By E. S. DUNLAP

DYEING AND FINISHING plants which maintained adequate laboratories and technical staffs were pretty much in the minority only a few years ago. True, a number of plants had laboratories, but very often these were staffed by boys just out of college, perhaps aided by several high-school graduates. The equipment was likely to consist of a few cracked beakers. The activities of the laboratory in those days consisted usually of routine analyses of chemical shipments, and sometimes of dyestuffs. The active participation of the laboratory in plant operation was neither understood nor desired. Except in a few of the more progressive plants, the general idea was, "We'll leave the laboratory alone, if it will leave us alone."

Today's picture is entirely different from that of 20 years ago. Due to the complexity of preparation, dyeing, and finishing operations today, there is scarcely a plant of any size which does not maintain a well-equipped, competently-staffed laboratory which is an active, functioning department of the plant.

Such a laboratory is maintained at Capitol Piece Dye Works, Inc., Garnerville, N. Y., a dyeing and finishing plant which processes mainly fabrics made of synthetic fibers. This laboratory operates as an integral part of the plant and acts as a centralized source of information on methods of preparation, dyestuff selection, and dyeing procedures, as well as on finishing operations.

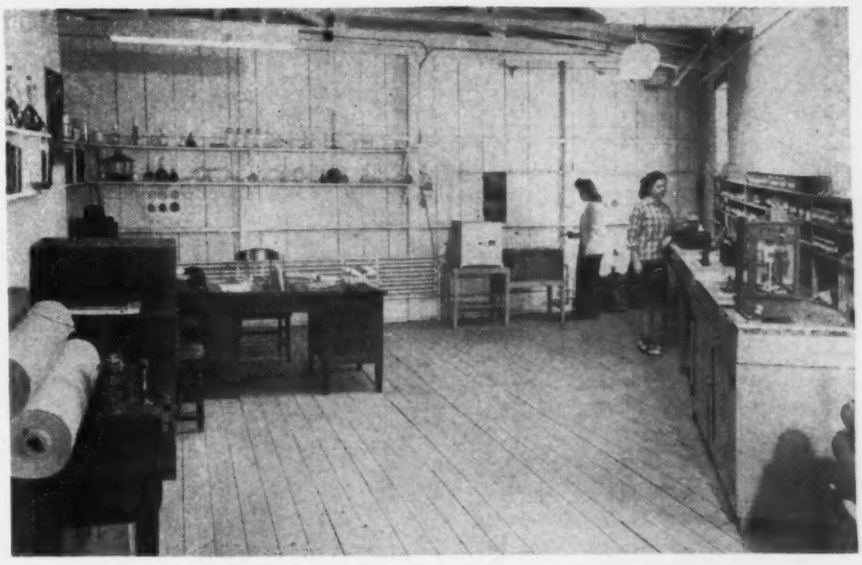
PREPARATION. One of the important functions of the Capitol laboratory is to check samples of the various fabrics sent to the plant for processing. First of all, it is necessary to determine what fiber or fibers are present in the cloth. This is particularly important because a supposedly all-viscose-rayon fabric sometimes turns out to be an acetate-viscose mixture. Goods received may contain Aralac in the blend which, if present, might alter the preparation procedure because high pH and high temperature can be quite harmful to Aralac. The next step is to ascertain the type of size present and to make tests to determine whether an amylolytic enzyme or proteolytic enzyme, or a mixture, is desirable for removing the size.

Most gray mills use identification tints for synthetic yarns, so a good boil-off is often advisable both to remove these tints and to prepare the fabric for dyeing.

DYEING. Dyeing operations have become quite complex, and the quality and types of dyestuffs must be selected with far more care than was necessary even a few years ago. The demand for improved fastness of color has been increasing rapidly; and the customer, who was satisfied in the past with anything he purchased, now knows what quality really means; he knows that fastness in dyes is a possibility, and he demands it. Probably one of the influences that has helped to make customers quality-conscious is the fact that various fabrics processed for our armed forces were rigidly tested and not found wanting.

Not only must the laboratory test each dye for money value, but it also must select those dyes which have the particular properties to meet the needs of the customer's fabric. It has been found that very careful after-treatment of many direct dyes will enable them to pass the AATCC No. 2 Wash Test, while still others can be made to pass

(Continued on page 184)



Laboratory at Capitol Piece Dye Works contains not only regular analytical equipment but special machines for evaluating water repellents, and machines for measuring crease and wear resistance.

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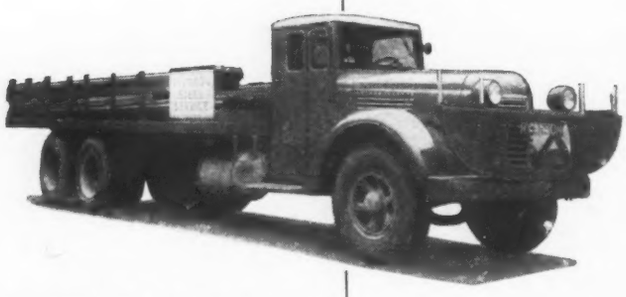
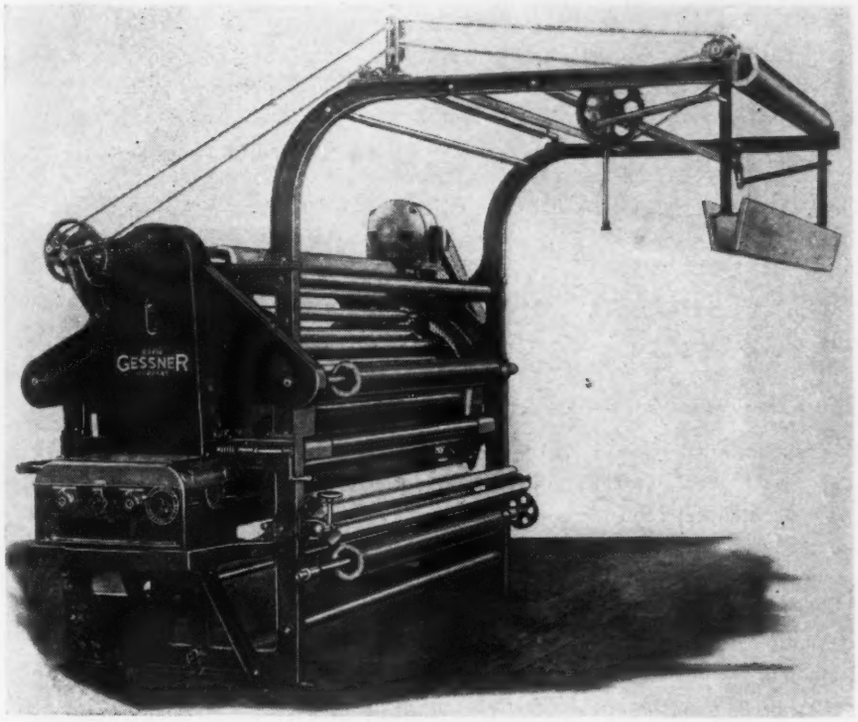


JOSEPH T. RYERSON & SON, Inc., Steel-Service Plants at: Chicago, Milwaukee, Detroit, St. Louis, Cincinnati, Cleveland, Pittsburgh, Philadelphia, Buffalo, New York, Boston

RYERSON STEEL

WOOL NAPPING
Shows Little Change—A Review



Single-acting nappers are considered to be good for raising the pile on fabrics such as melton, kersey, oxford, beaver, and broadcloth. Courtesy David Gessner Co.

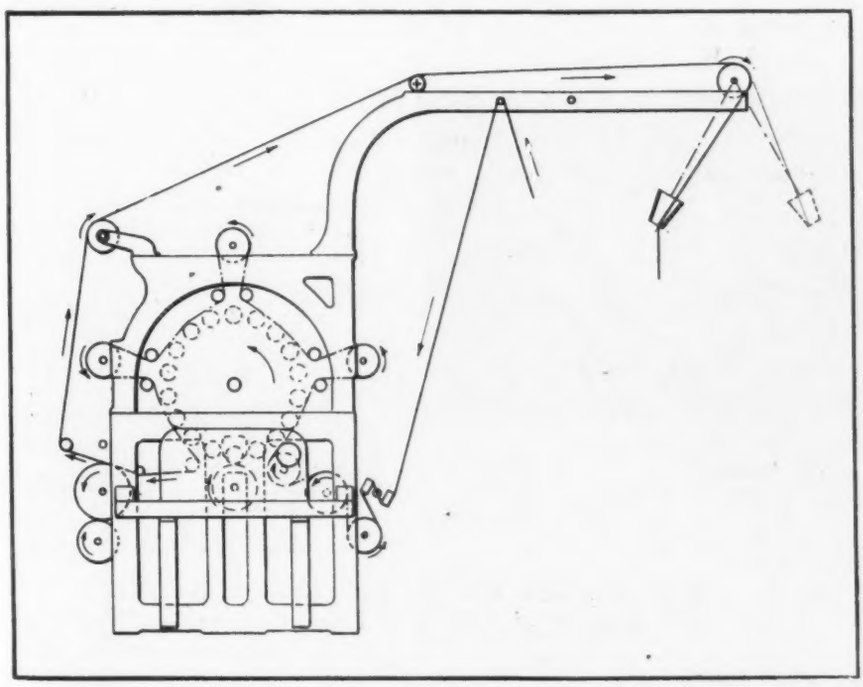


Fig. 1. Single-acting nappers, such as the one illustrated, lay the pile in one direction.

HIGHLIGHTS: *Fillet on workers must be kept needle sharp—Worker wire becomes dull more quickly in center of roll—Care necessary in setting time clearers.*

By EUGENE P. SCHREMP

FOR RAISING A NAP on woolen fabrics, the most common of several types of machines are teasle gigs and napping machines. Teasle gigging, which is slow and expensive, has been replaced largely by machine napping. The rolling action of a napping machine produces a loftier nap than do teasle gigs.

There are two common types of nappers for woolen cloths: single-action, and double-action machines. Single-action nappers have 14 to 18 rolls. Double-action machines have 18 to 36 rolls, which must be even-numbered sets and which are known as pile and counter-pile rolls.

SINGLE-ACTION MACHINES. Single-action nappers, as illustrated in Fig. 1, are sometimes called "French," or "straight-way" machines. On these machines, the nap is laid in one direction and has a distinct smoothness which can be noted by drawing the palm of the hand over the cloth. A definite roughness is sensed by rubbing the cloth in the opposite way. Cloth is run over the machine either wet or dry, according to the type of finish wanted.

Single-action machines are considered to be good nappers for fabrics such as meltons, kerseys, oxfords, beavers, broadcloths, etc. They are also used as a start for breaking in bolivias. The rolls, which are inserted in a revolving cylinder, are made of steel tubing covered with fillet or wire, depending on the type of cloth to be napped. The points of the napping wire face toward the back of the machine. A clearer roll, also covered with wire clothing and located under the center of the cylinder, acts as a stripper to keep the napping rolls clean and free from flocks. This roll should

(Continued on page 224)

cancelling an invitation to mold...

How Dowicides Prevent Destruction

Paint is a feeding ground for mold. But the paint industry is one of many in which wise manufacturers rely on Dowicides to protect their products.

Both oil and water paints contain food for microorganisms. Dowicides, added during manufacturing processes, forestall damage to finished product and to painted surfaces.

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DOWICIDES IN THE TEXTILE INDUSTRY

Dowicides are widely used in the textile industry to protect sizing solutions from bacterial attack. They not only prevent decomposition of the solutions but also protect the sized yarn during storage. Dowicides also are used as components of saturating materials to protect electrical cable wrappings from decay. Throwing oils used in silk and rayon production are protected by Dowicides which prevent molding and consequent loss in tensile strength of stored yarns.

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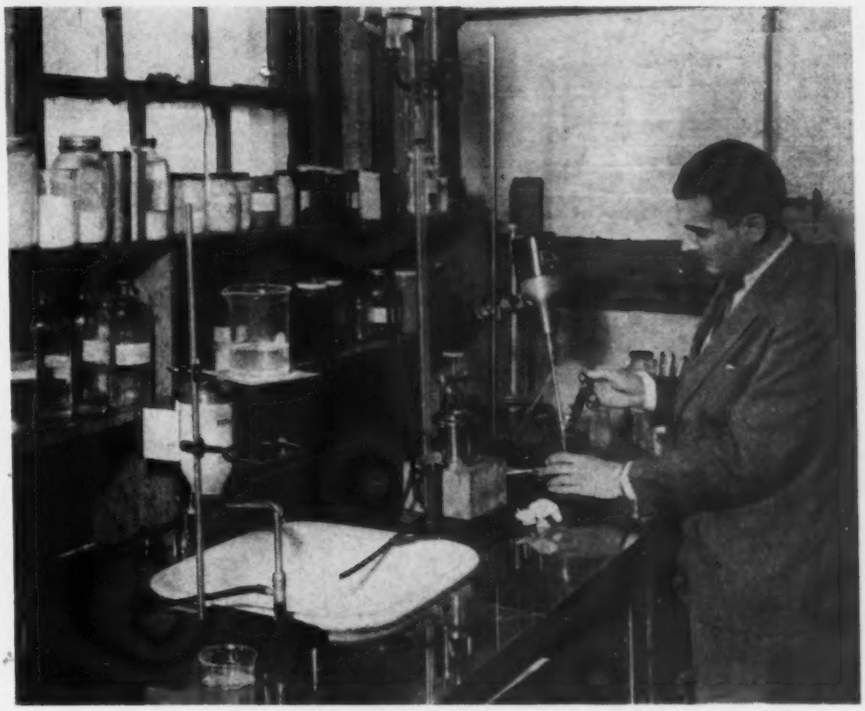
Emphasis Is on Quality In PRINT PREPARATION

HIGHLIGHTS: *Absorbency and whiteness stressed in British techniques—Multiple boils and scours for some goods are common practice—Continuous preparation units now in use will speed up process.*

By T. N. PATRICK



In desizing rayon fabrics for printing, the first step is to determine the type of size used. Laboratory facilities help in identifying whether it is starch, gelatin, glue, vegetable gum, dextrin, oils or fats, or some combination.

PREPARATION FOR PRINTING given to fabrics made from vegetable fibers, as well as from synthetic cellulosic fibers, may be considered in five steps: (1) singeing, (2) desizing, (3) scouring, (4) bleaching, (5) special preparations.

Printing may be looked upon as a local dyeing operation, where the dyeing takes place within a comparatively short period of time under limited conditions. The main limiting condition is the presence of a thickening agent dried on the fabric during printing, containing the dyestuff solution with which the fiber is to be colored. It is obvious that if the thickening agent has not thoroughly penetrated the fabric and the yarns and fibers thereof, the dyestuff solution cannot have thorough penetration. Penetration and absorbency are all-important in the production of satisfactory prints on almost any textile fabric.

The better chance for fixation present in most dyeing processes as compared with printing makes feasible a less intensive preparation for dyeing. For instance, in dyeing plain dark shades on cotton with direct dyestuffs, it is possible to proceed with the minimum of scouring and bleaching. However, if white and colored discharges are required on the same grounds, a much more thorough preparation will be required, especially in the bleaching.

The two main requirements in cloths prepared for printing are (1) absorbency and (2) whiteness. Absorbency is necessary not only for penetration, particularly in "push-through" styles of printing, but also for levelness and for satisfactory carrying out of certain finishing treatments, like the application of synthetic resins for crease-resistance. Whiteness is essential to the production of most first-class prints. In white-ground printing, the colors must stand out clearly against the pure white background; white discharges must have white grounds underneath the dye; tinted grounds for printed goods look their best only on a well-bleached bottom. The steaming process necessary for fixation of many dyestuffs will have the effect of yellowing goods which have been imperfectly scoured and bleached.

SINGEING. The purpose of singeing is the removal of excess fuzz from the surface of the cloth. Passing the cloth swiftly over suitably placed and designed gas-jets is the usual practice. A clean, sheer surface is desirable both in dyeing and printing; but in the latter process, singeing is essential because impressions look much better on a clean cloth surface, since sharpness and clarity of pattern outline are enhanced. A factor of great importance in singeing goods for printing is the complete removal of fibers, broken lengths of yarn, etc.; because, if such material becomes detached in printing, it may cause endless trouble in the form of printer's damages. Accumulations of loose fibers get into the color-boxes of the printing machines, catch

(*Continued on page 206*)

THIS ARTICLE is an interesting description of British methods employed in the preparation of cellulosic fabrics for printing. While the newer continuous scouring and bleaching ranges, with their savings in time, are well thought of and undoubtedly will be used more and more, much of the yardage going into prints is still prepared in kiers. The cloth undergoes many more operations in England and more time is spent on removing impurities than is common practice here. The lime boil, now generally supplanted in this country in favor of the caustic soda boil, is still used, although it is apparently held in less favor than formerly. With some exceptions, few prints here receive more than a single caustic boil, whereas multiple boils are still employed abroad.
—*Editor.*

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No Rubber Required in ELASTIC COTTON FABRIC

HIGHLIGHTS: *Elasticity achieved by twisting yarn into shape of coil spring—Up to 100% elongation obtainable—Yarn has lower degree of tension than that containing rubber.*

AN ELASTIC COTTON FABRIC which does not contain rubber has been developed by the textile division of United States Rubber Co. Known as "Strex," the new fabric is intended for use in slip covers, gloves, wearing apparel, surgical bandages, and other products. It is not designed for use in corsets, girdles, and other foundation garments.

Elasticity is achieved, according to a company spokesman, by twisting cotton yarn into the shape of a coil spring, which imparts a lower degree of tension than that of materials deriving their elasticity from rubber. Control of the twisting process permits various degress of elongation to be obtained, with a maximum of 100%. The elasticity reportedly will withstand repeated laundering or dry cleaning.

The coiling action required to obtain the elastic yarn is accomplished on an up-twister, using a special coiling device developed for the process (Fig. 1). No information has been released on the details of the coiling device or on procedures or tensions which are used in the preceding doubling process.

Weaving is accomplished in the ordinary manner. When surgical bandages are made, the fabric is slit into strips of desired width as it comes off the loom (Fig. 2).

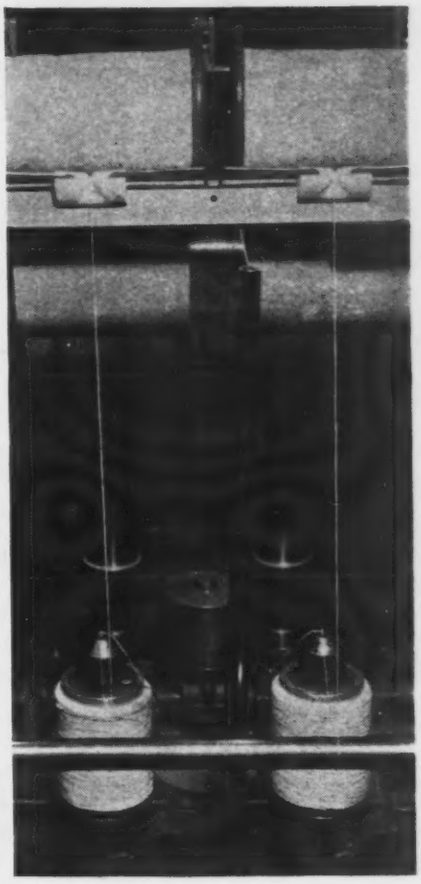

Fig. 1. Special coiling device installed on spinners of up-twister impart required coil-spring shape to cotton yarn.

Fig. 2. Strex surgical bandages are woven in usual manner and split into desired widths on loom. J. F. McMaster, Jr., examines Strex bandage material being wound on the loom cloth roll.

Fig. 3. Strex bandages can be wound tightly enough to prevent slipping; low degree of tension prevents stoppage of circulation.

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SHAW LONG-DRAFT Spinning Proves Success at China Grove

HIGHLIGHTS: *Shaw system developed by Saco-Lowell—Unique apron arrangement is secret of high drafts—Number of rovings needed greatly reduced—Spinning over wide range of numbers possible—Use is suitable for carded as well as combed cotton and for staple and blends under 2 in.*

SHAW LONG-DRAFT SPINNING has now been in commercial use for nearly four years at China Grove Cotton Mills Co., China Grove, N. C. While this mill, normally on fine combed yarn for the thread and knitting trades, has been working with the Shaw system since 1939, the first application was experimental; and Saco-Lowell Shops, manufacturers of the equipment, did considerable development work before undertaking a larger installation. Equipment was, however, ordered in sufficient quantity to put one entire spinning room of 98 frames on the Shaw spinning, and early in 1943 the change-over was completed.

There is every indication that the Shaw system of long draft, with practical drafts of 30 to 40, is a desirable long-draft system for combed yarn. It is said to be equally satisfactory for carded stock in coarse to medium counts as the result of an installation at Anchor Duck Mills, Rome, Ga. It has possibilities also as a system for spinning staple synthetics or blends under 2 in. in length because of its unique method of control of longer fibers. The drafting unit consists of three steel bottom rolls, three cushion-type top rolls, the apron, and auxiliary units. The front and back steel rolls have the standard spinning-roll fluting.

SHAW PRINCIPLE. Basically the Shaw principle of long draft (Fig. 1) involves a control of the long fibers between the middle and front rolls. The system also exercises restraining influence on the shorter fibers, which are passed along in proper sequence to the nip of the front roll, thus allowing longer drafts than could be secured on previous systems of drafting.

This control is obtained by using a large middle top roll, which is set ahead of the bottom middle roll and has a special surface which effectively drives the apron on the middle roll without pitting it. This apron runs over the bottom middle roll and over a guide bar between the front and middle roll somewhat as in the Roth-

(Continued on page 226)

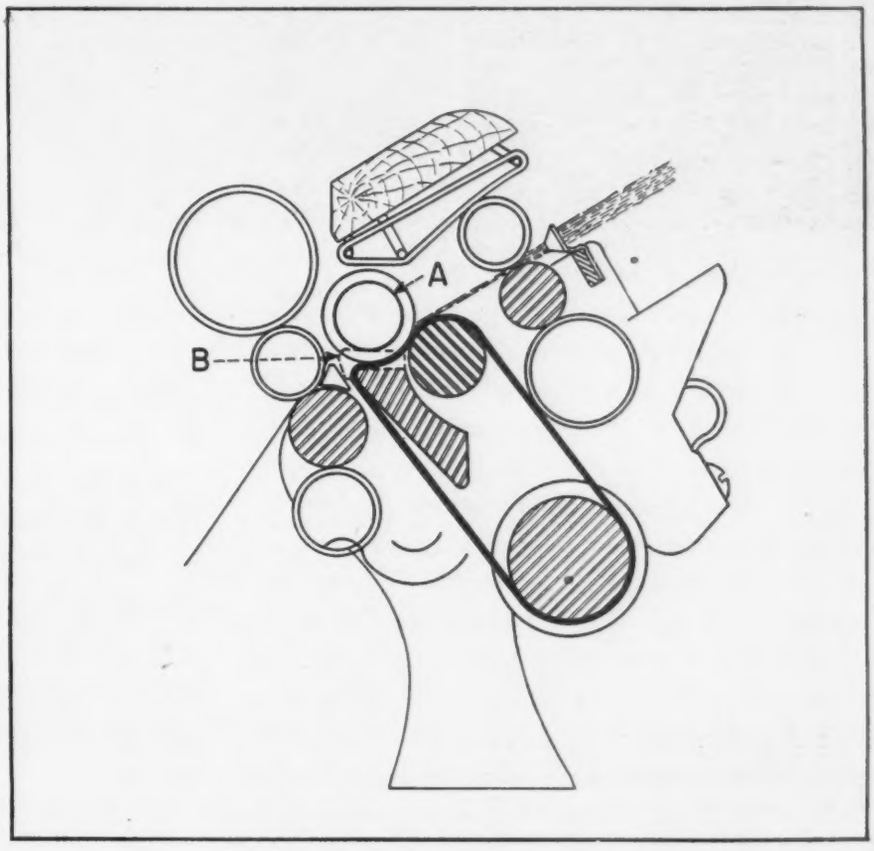

Fig. 1. Cross-sectional view of the Shaw long-draft shows principal features of the system, including method of controlling pressure between the middle roll and apron by means of the bushing A at the end of the roll resting on the cap-bar ledge B.

PROCTOR "Super-Speed" DRYING SYSTEM Applied to SINGLE RUN TENTERS

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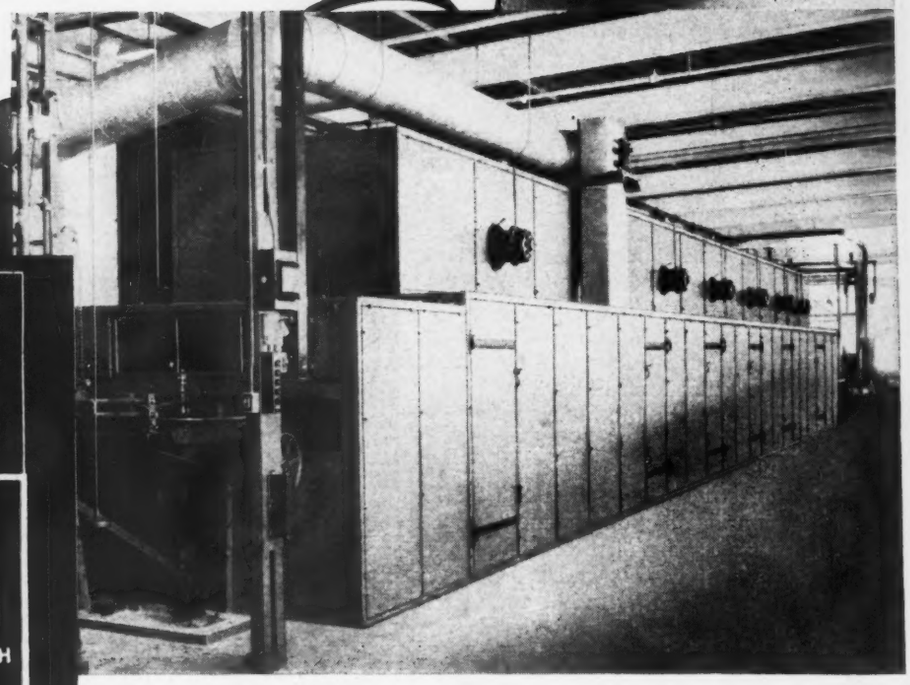

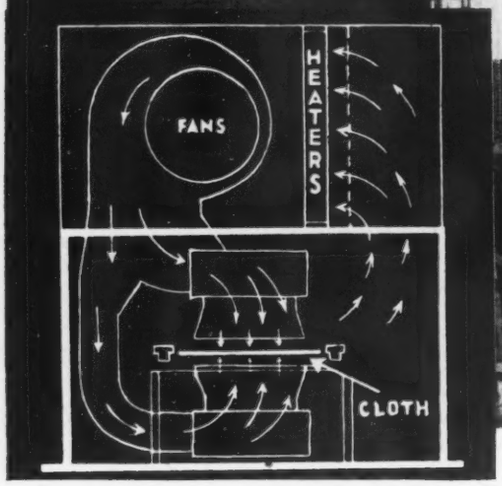

Everything about the Proctor Super-Speed System applied to single run tentering machines is aimed toward maximum efficiency in the finishing department. The output that it is possible to achieve varies with individual plant requirements, length of the machine and weight of goods. Output is kept to the maximum largely through the unique system of air circulation. Air, at high temperatures, is impinged, through nozzles against *both* sides of the fabric as it is carried through the drying chambers. Circulating through the goods, this penetration of uniformly heated air reduces drying time and increases output. Regulation of moisture in the air, so as to obtain speedy drying without harsh effects on the cloth, has an important bearing on the quality of the finished goods. Temperatures, air velocity and drying speed may be altered for drying a wide variety of fabrics and finishes. One of the most recent applications for this system has been in the drying of fabrics preparatory to curing. If the finishing of any class of goods which must be held to width is a part of your plant operation, you owe it to yourself to investigate the decided advantages that the Proctor system has to offer. Write today for details.

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CARDING of JUTE Determines Yarn Quality

HIGHLIGHTS: *Improved techniques make possible jute yarns as fine as 5.7s cotton count—Two-process carding yields better yarn strength and uniformity—Speeds of workers and strippers must be varied for jute stock of different characteristics.*

By S. A. G. CALDWELL

JUTE FABRICS suitable for a variety of purposes for which higher-priced textiles were formerly used have resulted from improved techniques in spinning, weaving, and finishing. Jute interlinings have almost ousted linen in Britain in the manufacture of popular-price suitings, and the demand still continues to expand. Jute is now used also to manufacture a wide variety of home-furnishing fabrics in attractive weaves and color combinations, and the progress achieved has broken new ground in the field of interior decoration.

The foundations of jute yarn quality and of efficient production in subsequent manufacturing operations are laid in the carding department. Analysis of production costs for each stage of manufacture shows that the costs for spinning and weaving are considerably higher than those for the preparatory processes. Since efficient processing in the early stages of manufacture is closely related to output and quality of the finished product, expenditure incurred to insure good opening and carding will be recouped in a substantial all-round reduction in manufacturing costs.

In dry spinning, yarn strength and appearance depend to a great extent on the length, uniformity, and fineness of the component fiber strands; and the importance of these yarn characteristics increases with the fineness of the count. In prewar years, single carding had been developed in Germany and other countries in continental Europe but had not made much progress in Great Britain. This system of fiber cleaning and sliver production used a combined breaker and finisher card instead of the two separate units previously employed.

SINGLE CARDING. In this single carding operation, a draft of about 30—compared with 12 and 15 on breaker and finisher cards—is employed. The effect of this method of carding is to produce a longer fiber and, therefore, a stronger yarn. However, the single-card system is suitable only for the production of medium and heavy counts. For fine yarn numbers, double carding—involving breaker and finisher units—is necessary to insure the desired degree of fiber fineness.

SURFACE SPEEDS

	(ft. per min.)
Cylinder	2400 to 2800
Feed roll	10 to 15
Workers	28 to 32
Strippers	300 to 500
Drawing roll	180 to 240
Doffer	90 to 120

Fig. 1. These surface speeds of breaker and finisher carding parts are generally used for processing jute stock for medium and heavy counts.

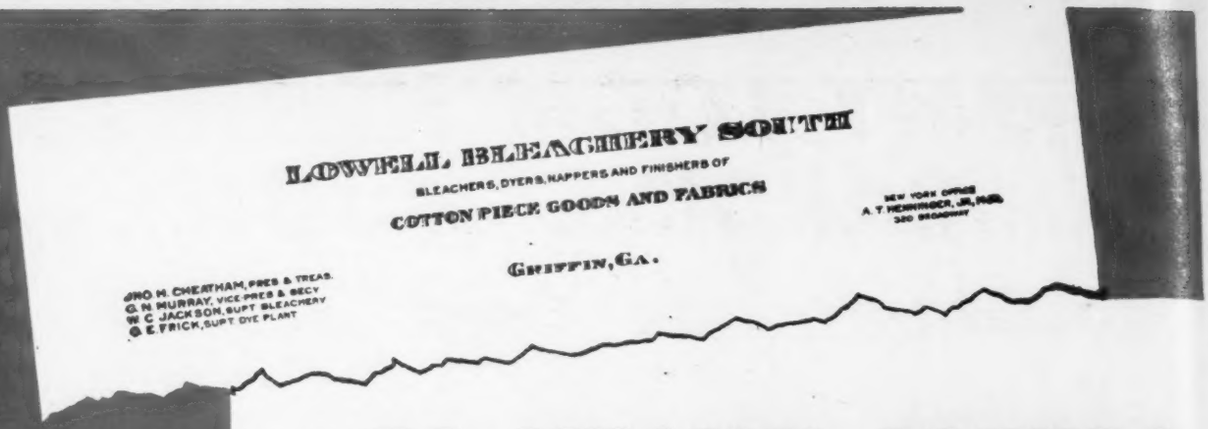
The jute breaker card has undergone little change in recent years. The standard cylinder size is 4x6 ft. To maintain the maximum length of fiber staple compatible with the requisite degree of opening and cleaning, large-

(Continued on page 194)

PIN DIMENSIONS AND ROLL SETTINGS

Cylinder	Pins per in. (in row)	5
	Projection (above stave)	3/16 in.
Feed roll	Pins per in	3
	Projection	1/2 in.
Workers	Pins per in	4–5
	Projection	3/4 in.
Strippers	Pins per in	4–5
	Projection	1/2–3/8 in.
Doffers	Pins per in	5–6
	Projection	7/16 in.
Settings	Workers to cylinder	14–16
	Workers to stippers	15–17
	Strippers to cylinder	14–16
	Doffers to cylinder	17–18

Fig. 2. These pin dimensions and roll settings are suitable for a modern jute card equipped with a cylinder 5 ft. in diameter and having six pairs of rolls, for preparation of sliver to be processed into yarns as fine as 3 lb. per spindle (5.72s cotton count.)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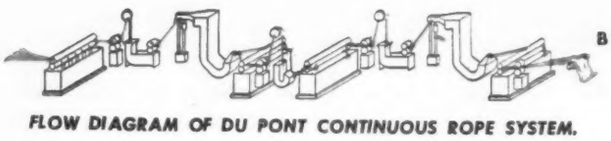

FLOW DIAGRAM OF DU PONT CONTINUOUS ROPE SYSTEM.

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. . . THROUGH CHEMISTRY

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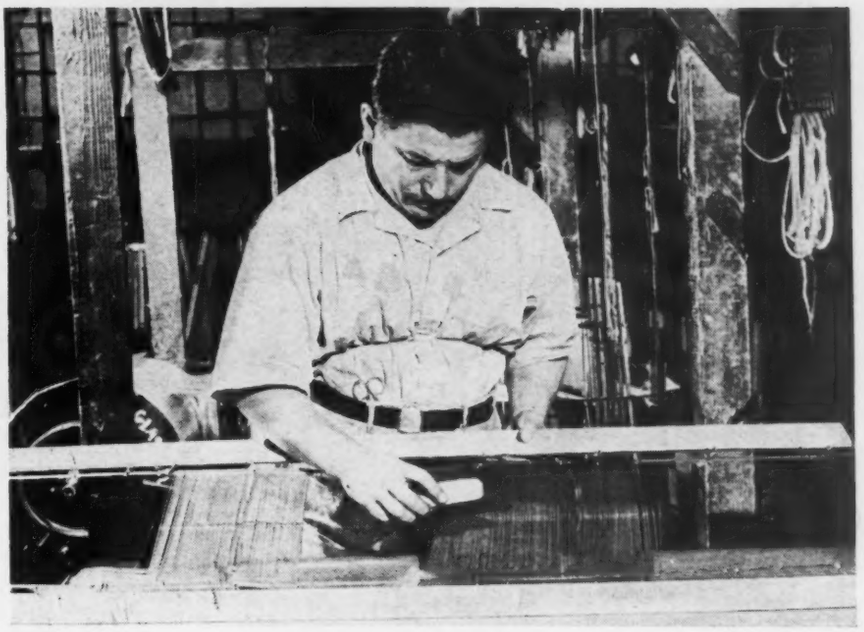
GUMMY LOOM HEDDLES Cleaned in Soaking Tanks

HIGHLIGHTS: *Easily constructed soaking tanks loosen gum and dirt from heddles used in mills weaving acetate fabrics — Dryer permits cleaning of heddles on wooden heddle frames without danger of frame warpage.*

By H. MOCHRIE



An adjustable or collapsible shelf should be attached to the soaking tank to permit brushing of the heddles between washing and the rinsing operations.

DIRTY AND GUMMY HEDDLES and drop wires are quite a problem in mills weaving acetate fabrics, particularly as the humidity in the weave room has to be kept unusually high. Frequently, after the same heddles and drop-wires have run several warps, they acquire a heavy residue of size gum that greatly interferes with the production and quality of the fabrics being woven; and because of this condition, the heddles and drop-wires are cut out and cleaner ones redrawn. It is impossible to clean these gummed wires in the loom, especially if the gum has hardened after weaving several warps.

SOAKING HEDDLES. The best and fastest method in cleaning such dirty heddles and wires is by submerging them in a tank of soapy hot water for 15 or 20 min., or long enough time to loosen up and dissolve all the dirt and gum on the wire. Some cleaning compounds on the market can be used if the accumulation is difficult to remove. After soaking, the heddles or drop-wires can be scrubbed, if needed, or just rinsed, in another tank of hot, clear water and placed in a hot dryer until all the water has been evaporated.

Heddles should be kept on their frames throughout the cleaning and drying procedure, as this requires less labor and insures a thorough cleaning job. Wooden heddle frames will not warp or get out of shape so long as they are quickly dried.

TANK CONSTRUCTION. The tanks used should be constructed of sufficient size to hold at least 40 heddle frames of the largest sizes used in the mill. Suitable tanks can be constructed of heavy lumber lined with a non-corrosive metal, such as copper sheeting. The tanks require drains, water, and steam connections, and overflow drains for emergencies. The steam pipes should be perforated and placed at the bottom of the tanks, running from one end to the other. A square, toothed metal attachment should be placed at the bottom of the wash tank so as to separate and hold the heddle frames in an upright position. An adjustable or collapsible shelf or tray should be attached to be used for brushing the heddles between washing and rinsing.

DRYER CONSTRUCTION. The dryer should be constructed of the same dimensions as the wash tank and should have a similar attachment to hold and separate the heddle frames to hasten drying. A motor-driven fan with a radiator-coil heating blower unit has been found most suitable for this dryer. It can be attached to one end of the dryer. The other end should have a series of small holes to prevent the air inside the dryer from becoming saturated with moisture. The dryer should be equipped with a cover to keep the heat inside it when in use.

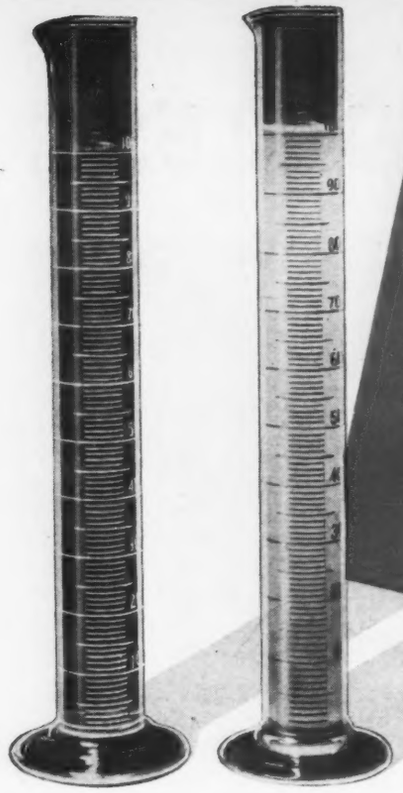
Industrial soaps that quickly cut into grease and size gums can be used for cleaning the heddles and wires; a ratio of 1 lb. of soap to each 10 gal. of water has been found to work out satisfactorily with most soaps. These soaps will not cut into badly rusted heddles, but there are several rust-remover products on the market that will loosen up and remove such rust.

In an 8-hr. work day it is possible for one hand thoroughly to clean and dry 500 heddle frames and their approximately half-million heddles.

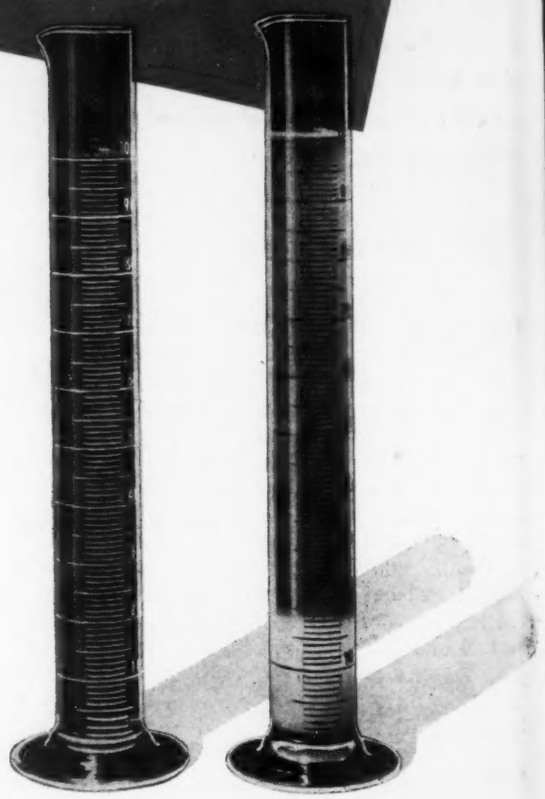
Abrasive papers and cloth, no matter how fine the grit may be, should not be used to remove rust. To use them will remove the plating on the heddles and will scratch them, leaving sharp burrs and rough edges on the wire.

Before being reused, heddles should be thoroughly inspected for crookedness, sharpness, hardened size, or rust spots at points where the warp yarns may come against them in weaving. Heddles found to be defective should either be discarded or repaired. If large numbers of heddles are found to be badly rusted, they should be sent back to their original manufacturer, who undoubtedly has equipment to strip and replate them. The cost for this should be much less than for new heddles.

THE WATER CONDITIONER that shows "unseen" results!



Both graduates contain equal amounts of sodium metasilicate dissolved in hard water. Graduate at left also contains enough QUADRAFOS to soften water. Photographed immediately after mixing.



Same two graduates after fifteen minutes. No precipitate can be seen in QUADRAFOS-treated solution. The other is cloudy and has thrown down a heavy precipitate.

QUADRAFOS* SOFTENS HARD WATER . . . WITHOUT PRECIPITATION

If scale, scum or other deposits caused by the precipitation of carbonates, orthophosphates, silicates and soaps in hard water are fouling up your product or equipment, it's time to investigate QUADRAFOS . . . sodium tetraphosphate made by Rumford.

Tests in your own laboratories will prove to you that QUADRAFOS keeps *both* calcium and magnesium in solution—"unseen" . . . prevents precipitation of iron and other metallic salts. Moreover, you'll see how quickly QUADRAFOS redissolves precipitates already deposited.

TRANSLATE LABORATORY RESULTS INTO PROCESS BENEFITS

In Textile, Laundry and other uses:

- Less soap needed.
- No calcium and magnesium soap scum on products or equipment.
- Cleaner fabrics with fewer rinses and less bleach.

QUADRAFOS SAVES TIME . . . SAVES MONEY WRITE FOR COMPLETE DATA

Literature describing the water-softening, detergent, deflocculating and emulsifying properties of QUADRAFOS is yours for the asking. Write to Rumford Technical Service Department.

QUADRAFOS

RUMFORD CHEMICAL WORKS

11 Newman Ave., Rumford 16, Rhode Island

APTITUDE TESTS Aid Placing of Workers at Clearwater

Fig. 1. Testing for spatial relations.

HIGHLIGHTS: *Tests help place worker in right job—Evaluation of third dimensional sense and color perception stressed—Tests must be checked for reliability and validity.*

By B. GORDON BYRON, *Director of Training, Clearwater Mfg. Co.*

Fig. 2. The Keystone visual safety test equipment for testing visual acuity. Color blindness is also revealed by this machine.

THE TESTING OF APPLICANTS for jobs and the testing of present employees have become increasingly important in recent years. The installation of such a program requires careful thought and planning, as well as a definite idea of the objectives sought. One might add that an understanding of what tests will not do, as well as what they will do, is essential.

Human material is probably nature's greatest variable, and to play around with human character, temperament, and ability, without careful thought, study, and training, is on a par with a child's dismantling of a fine watch.

OBJECTIVES LISTED. There are three major objectives any plant manager undoubtedly seeks in a testing program.

The first is placing the right worker in the right job. Square pegs in round holes are traditionally bad misfits; but, so far, many personnel departments have done little about it. The urgent, immediate demands of department heads on personnel departments for more labor usually result in applicants being referred to the foreman who squawks the loudest, regardless of the suitability of the applicant for the work.

One personnel manager told me recently, "Our only test is to place a hand on the back of his neck, and if it is warm, we say, 'Come right in,' and we put him where he is most needed." A gross exaggeration, of course, but many placement procedures are very little more scientific or selective.

When no previous experience in the industry is involved, aptitude tests may be very valuable in discovering the "round pegs" for the round holes.

A second objective is to get some insight into the applicant's mental ability. A worker who can learn a new

(Continued on page 186)

SUBJECT Positive tramp iron removal

what textile magnets can do the job?

Unbiased field and laboratory reports show conclusively that magnetic separators handling large quantities of stock should have far greater depth of magnetic field than so-called "permanent" magnets supply. Positive tramp iron removal should be accomplished without limiting the speed or quantity of material passing the separator. Narrowed duct work to accommodate the limited range of "permanent" magnets not only cuts production volume, but also invites chokes which are a serious fire hazard in themselves. Textile magnets should have the *range* and *power* to secure positive tramp iron removal at full production volume rates.

why

Dings "High Intensity" Textile Magnets

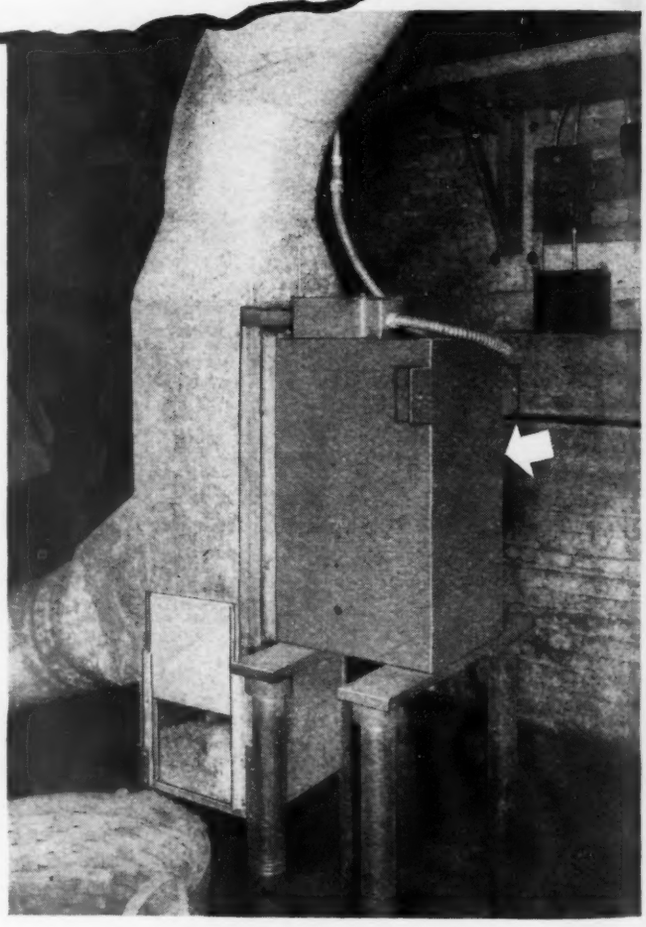
are the answer...

1. Dings Textile Magnets are *electro-magnets* with over 20 times the effective range of non-electric magnets!
2. Full "High Intensity" magnetic strength . . . No diminishing of power after a few months' use.
3. *One* magnet does the job . . . No need to install two or more in complicated duct work.
4. No "bottleneck" ducts necessary to get material close enough to magnet . . . Dings Magnets have range and capacity to handle big production volume, *safely*.
5. Corrugated bronze face plate is non-sparking, helps trap non-ferrous foreign materials as well as tramp iron.
6. No scraping of magnet face necessary. Tramp iron drops into trap when current is shut off.

Write today for details on Dings Textile Magnets for protecting your plant.

DINGS MAGNETIC SEPARATOR COMPANY
540 East Smith Street • Milwaukee 7, Wisconsin

Dings "HIGH INTENSITY"



Note full duct capacity at Dings Textile Magnet in this typical installation. Trap at bottom contains tramp iron and non-ferrous foreign material stopped by corrugated face plate.

ACETATE ORGANZINE
Not Difficult to Throw

HIGHLIGHTS: *Small bobbins preferred—Ply twisting done in two operations—Tension kept low—Procedures follow those for silk.*

By SAMUEL J. MILLER

THROWING 45-DEN. ACETATE into 2-ply organzine with 14-to-12 or 16-to-14 turns of twist follows the general procedures formerly followed by silk organzine, and the acetate is not difficult to throw. The yarn is first twisted in the single end, 14 to 16 turns per inch, either S or Z, after which two such ends are doubled together and spun in the opposite direction.

The acetate to be thrown is usually received on the producer's cones and has a few turns of twist already inserted. It must be wound on to the proper spinning bobbins before it is twisted; but oiling or other treatment is unnecessary, excepting possibly striping the cones with a fugitive tint to identify the yarn.

The spinning bobbin should not be too large. One holding about a third of a pound with a small head and a minimum of overhang is preferable. A 4-in. traverse bobbin with a 2½-in. head and a 1⅜-in. barrel will run well —if the winding is good.

WINDING. The yarn can be wound from the cone through disk tensions at a thread speed of 160 to 170 yd. per min. A bobbin firm enough for good spinning can be wound by using an average tension of 7 to 8 grams. A 22 to 25 wind between the heads is satisfactory, although less is better if the winder is capable of building a good bobbin at a high speed and a fast wind. After winding the single end onto spools, the yarn can go to the up-twisters, or first-time spinning. Here the turns of twist are inserted in the direction wanted, either S or Z, at a spindle speed of about 10,000 r.p.m. No flyers are needed in the first-time spinning; but basket tensions are used, either 2- or 3-coil types. The average tension here should be low, from 7 to 8 grams.

The size of take-up spool used depends on the machines and their spindle spacing. The take-up spools can have either fixed hollow gudgeons or loose-pin gudgeons, but the former are preferable.

After the first-time spinning of 14 to 16 total turns, the acetate can be put on the doubler twisters for plying. Two single ends are doubled using a twist direction opposite to the single thread. During the plying of the threads, 2½ to 3 turns of twist are usually added, just enough to hold the threads together.

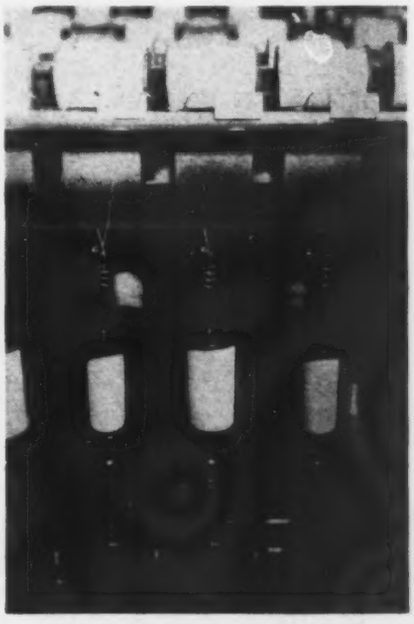
The spindle speed of the double-twister can be from 5,000 to 5,800 r.p.m., and machines with double stationary 1-in. feed rolls or the 2-in. feed rolls can be used. Self-lubricating rings are recommended because of their cleanliness and smooth operation. It is necessary for the bobbins used to have a taper hole, since, after the doubling-twisting operation, the acetate goes again to the up-twisters where a final twist of 9 or 11 turns is added. The second-time spinner can be the same kind of machine that was used in the first-time spinning, and the spindle speed is also 10,000 r.p.m. A metal steaming shaft is used on the cork take-up rolls, for the steaming or setting of the twist follows. Basket-tension wires of 2 or 3 coils again are used.

After the final twist has been added, the metal steaming bobbins, called iron heads, are steamed a few minutes to set the twist for reeling into skeins. The number of winds between the metal heads should not be too many or the yarn will not unwind freely in reeling—about 2 to 5 wraps per traverse is good. After steaming and a 2-to-4-hr. conditioning period, the 2-ply yarn is ready to be reeled into skeins of whatever yardage desired. The reel fly generally used has 12 spaces for 12 skeins, and gears to control the diamond desired on the skein.

The average reeling speed should be 350 to 400 yd. per min. After reeling, the skeins are laced with 4 laces to the skein. In reeling yarns having twist, there is always some distortion. Therefore, before removing the skeins from the reel-fly, the yarn is steamed again for a few minutes.

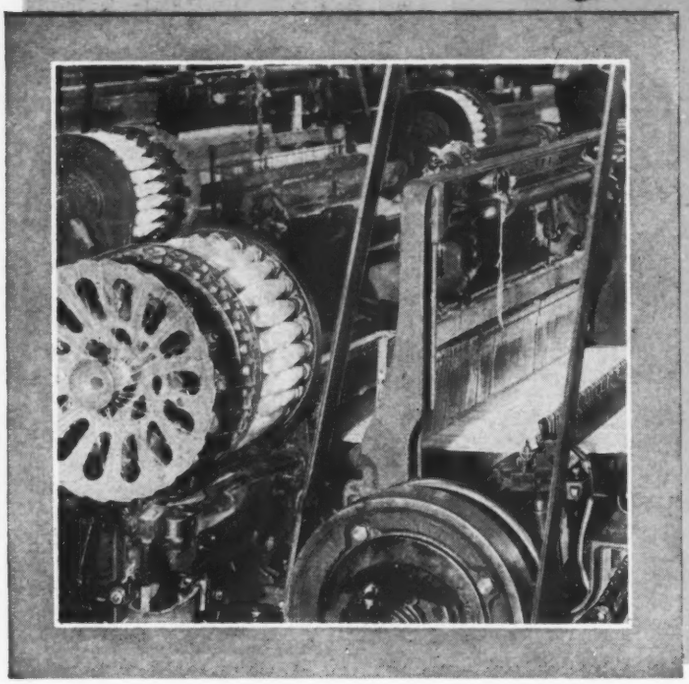
The finished two-thread organzine is now ready for inspection and bundling. In bundling, two skeins are hanked together into one roll, and 80 such rolls, or 160 skeins, are put in a bundle. The bundle is then pressed into a neat package by a reel-press, which is operated either by water or steam. Packaging for shipment follows.

A variation, of course, is to redraw rather than to reel the yarn, but this practice involves the problem of shipping bobbins.



Basket-wire tensions are used for both first and final twisting operations.

HERE'S WHAT YOU NEED IN A *Loom Oil*—



1. **High lubricity to cut down wear.**
2. **Low gum-forming tendency.**
3. **Good cohesion for minimum drip and creep.**
4. **Washability to remove the "minimum."**
5. **Sure protection against rust.**

WHAT SHELL DOES IN PREPARING *Shell Textilis Oils for Looms*

Lubrication is the oil's main job. Shell employs highly scientific methods of selecting crude oil stocks—only those yielding high lubricity are used in loom oils. "Oiliness" is improved by compounding straight mineral oils with natural fatty oils.

Gum-Forming is evidence that an oil oxidizes easily. Shell removes all unstable compounds from loom oils by means of a solvent-extraction process.

Dripping and Creeping are largely eliminated by the selective refining which results in a viscous, cohesive oil that *stays put.*

Washability is secured by the use of natural fatty oils that readily emulsify with water—gets rid of any trace of oil in the finishing.

Rust Prevention is a primary problem in the moist atmosphere maintained in the weaving department. Shell fortifies Textilis Oil with a special rust preventive that gives it metal wetting ability much higher than that of water —means sure protection against rust.

The Shell Lubrication Engineer will gladly give you specific advice on the lubrication of any type of loom, as well as on other mill equipment.

For informative literature about textile machine lubrication, write to Shell Oil Company, Incorporated, 50 West 50th Street, New York 20, New York; or 100 Bush Street, San Francisco 6, California.

SHELL TEXTILE LUBRICANTS

SHELL

TEXTILE Equipment NEWS

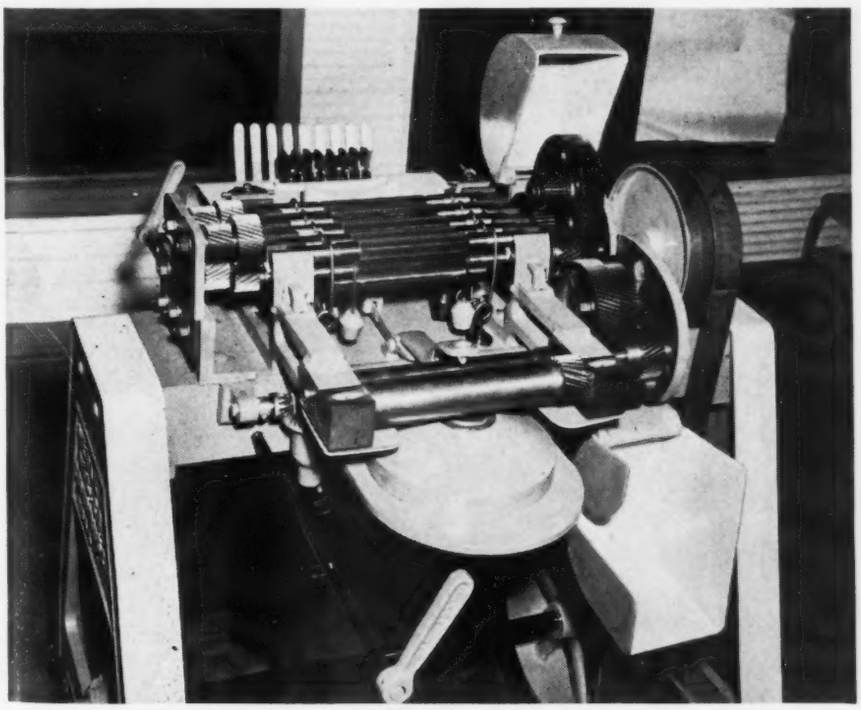
New Drawing Frames Feature Precision Rolls

A line of drawing frames which includes models of standard, medium, wide, and extra-wide construction for processing natural and synthetic fibers from ⅜ to 6 in. in length is being built by Medley Mfg. Co., Columbus, Ga. By applying the slip-draft principle of unweighting some of the rolls, a mill can run stock up to 9 in. in staple length.

The frames are furnished with four or five lines of metallic rolls for cotton and four lines for wool and synthetics. The medium, wide, and extra-wide lengths of roll stands can be provided for drafting up to eight ends per delivery. At present, frames are available with one, four, or six deliveries each.

Incorporating the features of the Precision Metallic Drawing Rolls, provided for several years by Medley as change-overs for all makes of standard drawing frames, the new frames offer: (1) hobbed spiral gears of steel and cast iron; (2) studs, journals, and roll necks of stress-proof, case-hardened steel; (3) rolls of fine-grained steel; and (4) case-hardened roll collars with sealed, prelubricated ball bearings in which the roll necks operate.

Mill installations, it is said, have demonstrated that the drawing frames perform satisfactorily in processing cotton, synthetic, cut-wool, and worsted stock.



The five-roll, eight-ends-up drawing frame for processing cotton and other short fibers is one of four models of drawing frames featuring the Precision Metallic Drawing Rolls. (Medley)

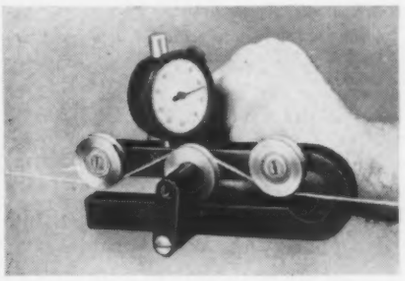
Motor Size Reduced By Steel Construction

A line of all-steel a.c. motors, known as Life-Line, reported to effect a 35% reduction in size over previous models without sacrifice of electrical properties or departing from standardized NEMA dimensions has been announced by Westinghouse Electric Corp., 306 Fourth Ave., Pittsburgh 30. Starting torques have been increased as much as 134% per lb. of motor, it is stated. Maintenance requirements are said to be decreased through use of prelubricated, sealed ball bearings. Stainless-steel shields and hoods are available for application where severe conditions, such as in chemical plants or processing plants handling chemicals, require higher-than-usual corrosion resistance.

All-steel motors effect 35% reduction in size over previous models. (Westinghouse)

Tensometer Measures Load Up To 100 Lb.

A new tensometer for measurement of tension in single strands of yarn or cord, with a range up to 100 lb., has been announced by Walter Kidde & Co., Inc., Belleville, N. J. Threaded with a moving, continuous yarn or cord, the tensometer measures tension directly in pounds. Rapid fluctuations

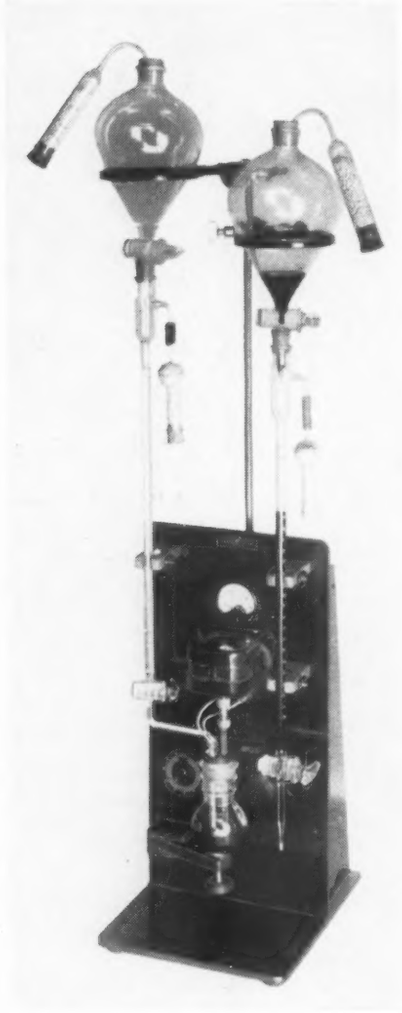


Yarn wheels of tensometer are made of stainless steel and are mounted on ball bearings. (Kidde)

are reported to be recorded with little or no error because of the sensitive movement of the members.

The handle and frame of the new instrument are made of aluminum alloy and are finished with a black anodic coating. The grooved wheels which carry the yarn are of stainless steel and are mounted on precision ball bearings. Accuracy of the instrument is unaffected by either time or hard use, it is said.

Electrometric Titrator Uses Dead-Stop Method



Electrometric dead-stop end-point titrator uses Karl Fischer reagent. (Wilkens-Anderson)

A dead-stop end-point titrator, using a special reagent and electrometric indication, has been announced by Wilkens-Anderson Co., 111 North Canal St., Chicago. The Karl Fischer reagent, a mixture of sulphur dioxide, iodine, pyridine, and methyl alcohol, may be made in the laboratory or purchased.

In operation, an e.m.f. of 10 to 15 mv. is impressed on two platinum electrodes immersed in the reagent, which reportedly causes sufficient current flow to deflect a microammeter. As the test liquid is added, free iodine is used up by the contained water and the needle deflection is decreased. At the end point, the pointer suddenly returns to a reading at on near its rest point, it is stated.

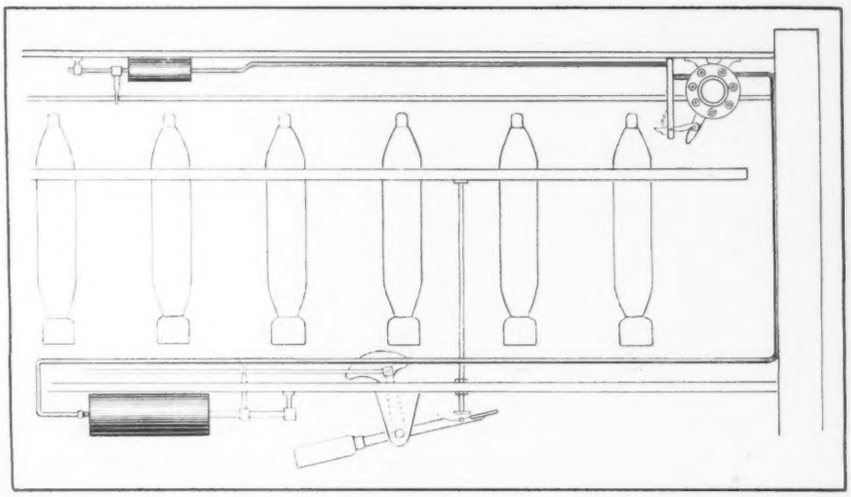
The technique is said to be simple and amplification unnecessary.

Automatic Control Stops Spinning Frames

A system for automatic control of bobbin size has been announced by Ernest F. Culbreath Co., Charlotte, N. C. Designed for the purpose of eliminating uneven packages from doff to doff, eliminating uneven tails at the butts of bobbins, and reducing ends down when starting up, the Namo spinning control consists of a system for automatically bearing the ring rail down at a pre-determined speed when the preset package size has been achieved and for stopping the frame at a point which gives the desired tail.

The unit operates pneumatically from the mill air supply, requires 20 to 40 psi., and is said to use about ½ cu. ft. of air per operation. It consists of one or two valves (depending on type of bobbin build), one or two cylinders (depending on type of drive), tubing for connecting up valves and cylinders, and mechanical connections.

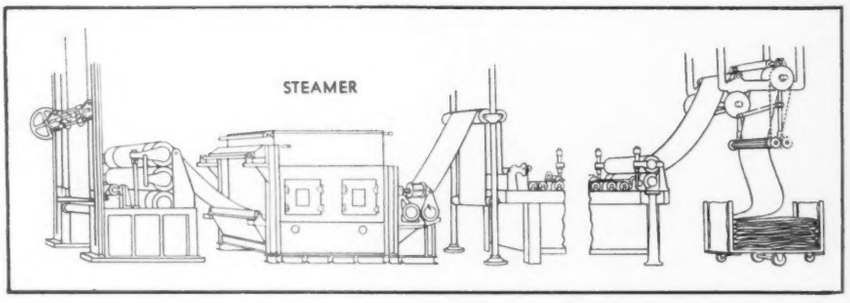
It is reported that installation is so simple it can be accomplished by any good fixer and that only four adjustments are required.



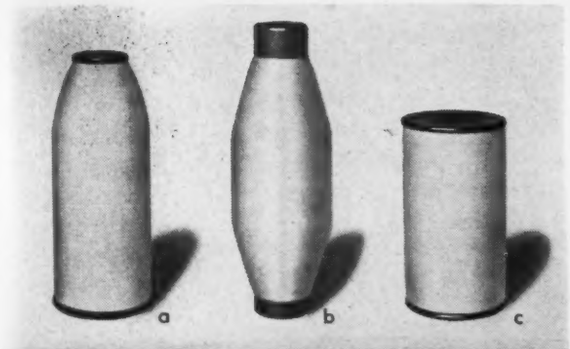
Automatic spinning control is designed to depress ring rail and stop frame when desired package has been built. (Culbreath)

Vat-Dyeing Range Uses New Steamer

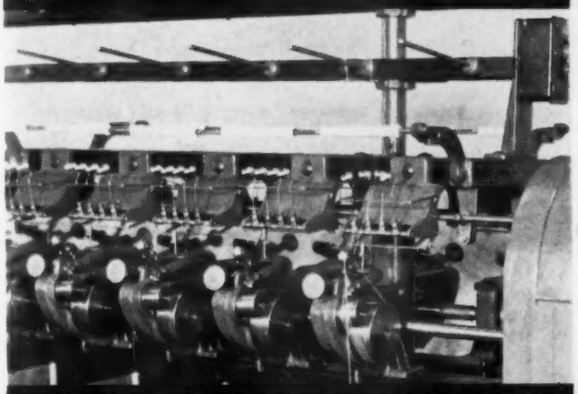
Details of equipment used in the new vat-steam method of continuous dyeing have been announced by H. W. Butterworth and Sons Co., York & Cedar St., Philadelphia. Ranges for continuous vat dyeing, now in operation, are said to be producing fast shades at speeds ranging up to 120 yd. per min. with more uniform color ap-



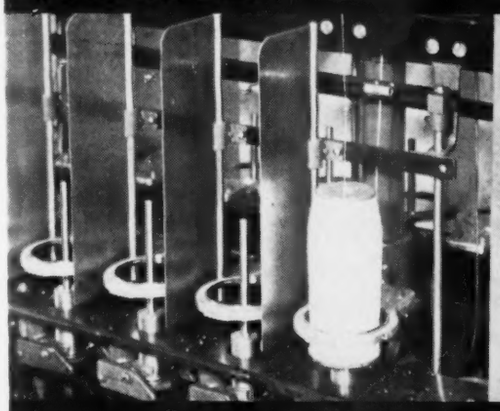
Vat-dyeing-range steamer has provision for cloth entrance at top or bottom. (Butterworth)



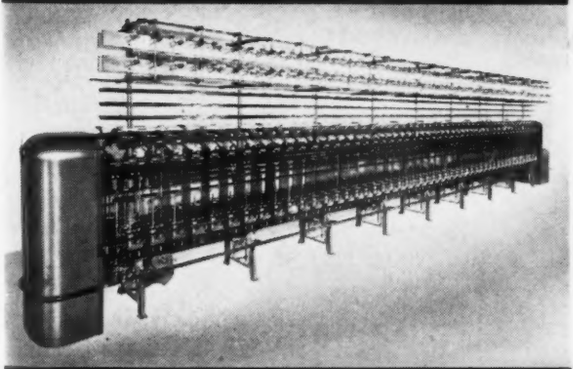
The package produced on the Atwood Ring Twister may be (a) tapered top, (b) double tapered, (c) straight wind.



The machine has a stop motion for each spindle, permitting the tying of knots in single ends and eliminating yarn with a ply missing.



It has full-length spindle separators that give protection to the entire bobbin at all times.



All these, as well as many other improvements of equal importance, are "standard" in the New Atwood Ring Twister.

PROOF

...that the art of doubling and twisting never stands still

Not since the first models of the Atwood Ring Twister, for doubling and twisting yarn, were placed on the market, have either the machine or the process remained static for any appreciable time. Both have advanced — simultaneously.

Latest evidence of this dual progress can be found in the *New* Atwood Ring Twister for

WOOL, WORSTED, COTTON, SILK, NYLON, RAYON, SPUN RAYON OR COMBINATION YARNS.

Built in two sizes, Models 10 and 11, only 26″ and 32″ wide, with maximum ring diameters of 4½″ and 5½″, and maximum traverse of 8″ and 9″, respectively.

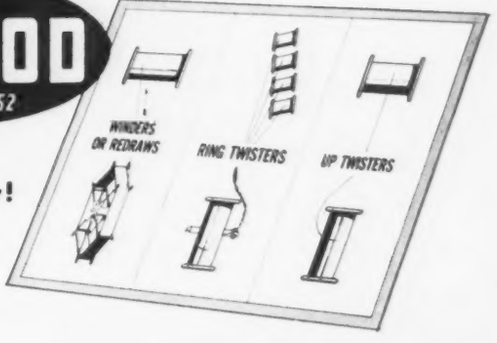
If you are not familiar with what's new in yarn machinery, why not write for complete details of the latest Atwood Ring Twisters, Up-Twisters and Redraws?

AD-8

ATWOOD DIVISION
FARREL-BIRMINGHAM COMPANY, INC.
STONINGTON, CONNECTICUT, U.S.A.

ATWOOD
SINCE 1852

What's new in yarn machinery!



plication and savings up to 25% in dyestuff costs.

A newly designed steamer, by liberating live steam in an air-tight chamber, is said to assure penetration of the dye and more thorough color fixation. Cloth enters the steamer at the top for regular steam processes; cloth enters at the bottom through a liquid seal for steam and liquid-booster processes. Choice of cloth entrance depends upon processes used to obtain desired effects.

The usual arrangement, using the process, is to accomplish the vat dyeing in two ranges. The first range includes a 3-roll padder for application of the color in pigment form, a special-type air dryer, and a folder; the second section includes a 3-roll padder, a steamer, a water seal and squeeze rolls, a 6-box washer, and a folder.

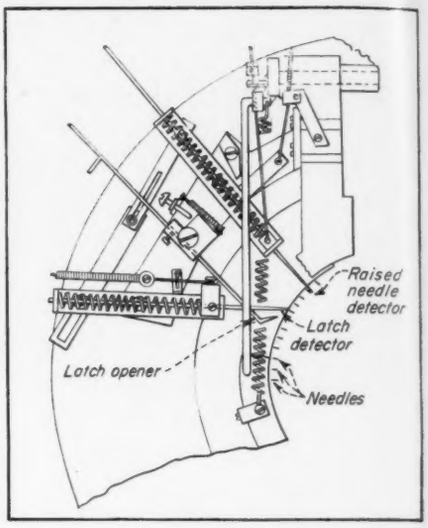
Distributing System Feeds Processing Soap

A soap-distributing system for fulling mills, washers, and other wet-finishing equipment, announced by Riggs & Lombard, Inc., Lowell, Mass., consists of a series of supply tanks with feed lines and return lines leading to and from the equipment. Soap is forced through the pipe lines by means of a special motor-driven pump. Each supply tank is provided with shut-off valves on both the feed line and the return line, and similar valves are located on the branch lines leading to the individual fulling mills or other machines. Any unit can be cut out of production at will. All production units can be cut out, in which case the pump is used to circulate the soap through the system in a continuous cycle.

When used in conjunction with a soaping machine, the system can be equipped with automatic-level-control valves. A strainer introduced on the intake side of the pump to keep out foreign matter has reportedly proved to be of great benefit.

Knitting Stop Motion Also Opens Latches

A combined stop motion and latch opener for circular latch-needle knitting machines has been patented by J. A. Ruth, High Point, N. C. The device consists of a plate on the latch ring on which are mounted two detector fingers and a latch-opener finger which project into the needle circle. One finger detects raised needles not lowered in the knitting wave, the second finger detects closed latches, and the third opens closed latches, it is reported. The two detectors are connected to a knock-off device designed to stop the machine if either of them is acted upon by an improperly positioned needle or latch. The latch opener uses cam action to open closed latches, and is actuated by the closed-latch detector. Pattern-drum control is provided and is designed to withdraw the latch opener during heel and toe knitting.



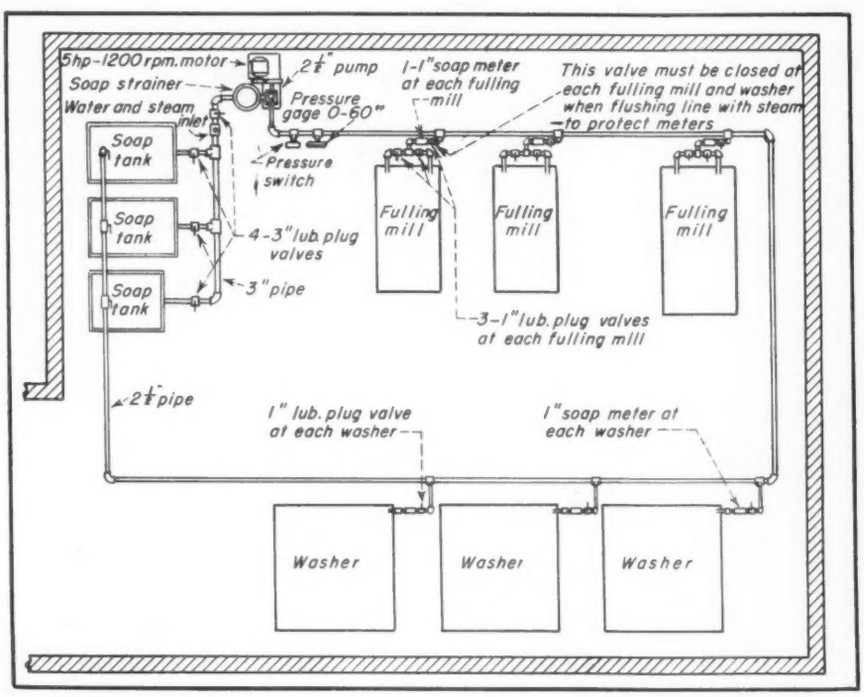
Combined stop motion and latch opener for circular machines utilizes three fingers mounted on latch ring. (Ruth)

Electronic Intercom Has Remote Feature

A new intercom unit, Model 1100, featuring new audio-amplifier circuit, especially designed alnico speaker, life-time neon pilot lamp, and vinylite-insulated moisture-proof interior wiring, has been announced by Executone, Inc., 415 Lexington Ave., New York 17.

Used in a system of 12 stations, the unit provides facilities for private, two-way voice communication with any combination of 11 other similar sta-

Intercom unit features moisture-proof interior wiring. (Executone)



Pump-driven soap-distribution system for fulling mills has a strainer on suction side of pump to catch foreign matter. (Riggs & Lombard)

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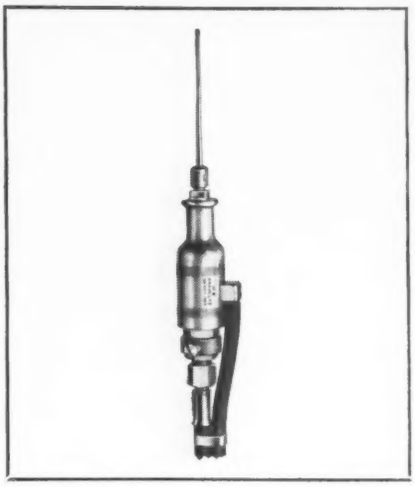
tions. Convenient identifying push-buttons enable any station to originate calls selectively. By flicking a toggle switch, calls can be received and replied to remotely from across the room without approaching the unit to depress the talk key. An automatic light signals when the station called is busy. A volume control provides adjustable power output.

Pneumatic Roll Picker Removes Lint and Fly



Pneumatic roll picker exhausts air to rear to prevent blowing fly into yarn or roving. (M-B Products)

A new pneumatic roll picker has been announced by M-B Products, 130-134 E. Larned St., Detroit 26. Especially designed for removal of lint and fly from top rolls and other drafting elements of spinning and roving frames, it is reported to be particularly effective on long-draft frames. Lint and fly are gathered by the pick, which rotates at high speed. Pick diameter is $\frac{3}{8}$ in., and two lengths are available: 5 in. long for use on spinning frames, and 7 in. long for use on roving frames.

Grease-sealed bearings are said to eliminate entirely the problems of lubrication. The passage of air through the mechanism reportedly keeps operating temperature below room temperature. To prevent lint, fly, or water from the air line from being blown into yarn or roving during use, the exhaust air is emitted a considerable distance back of the picker. Operating spindle speed is reported to be 20,000 r.p.m. on 100 psi. air pressure. Weight is 17 oz.

Useful Accessories For the Textile Mill

Will be found on page 202

PRODUCTS & PROCESSES

Dyes & Chemicals

Titration Indicator Gives Sharp End-Point

TRUTEST M-E-P INDICATOR: TruTest Laboratories, Inc., 261-263 S. Third St., Philadelphia 6.

A new, sharp end-point indicator, known as TruTest M-E-P- indicator has been announced by TruTest Laboratories, Inc. Said to meet all the requirements of pH control and to be so constant and sharp in color separations that even untrained personnel can use it, the indicator changes from an alkaline green to a neutral gray to an acid purple, or vice versa. One drop of N/10 acid is reported to be sufficient to carry 25 ml. of Na_2CO_3 solution from green to gray, and a second drop to turn the solution purple.

One drop of the indicator is sufficient for 25 ml. of solution, it is stated. It is an aqueous solution said to be stable, dependable, and unaffected by organic matter or phosphates in solution.

Flock Printing With Powdered Fibers

A new development in flock printing, developed by Spraytex, Ltd., Manchester, England, utilizes fibers that have been ground into a powder before being sprayed into the adhesive pattern.

Mill Maintenance

Wartime Extinguishers Need More Maintenance

Proper maintenance and annual inspection of fire extinguishers insure satisfactory operation in emergencies. The usual annual inspection may, however, be inadequate for the "EAS" devices (extinguishers approved by the Underwriters' and Factory Mutual Laboratories under Emergency Alternate Specifications) produced during the war, when lack of critical materials made necessary the use of substitutes, according to Safety Research Institute.

A comparison between some of the materials used in the standard units and those used during the war will make clear why it is essential to be on guard against deterioration.

The shells of all $2\frac{1}{2}$-gal. pressure units bearing EAS approval were made of steel instead of copper, which is used for the shells of standard extinguishers. Steel was also used in 1-gal. pressure-type, vaporizing-liquid units. Steel is, of course, far more subject to corrosion than copper.

The inner cylinders of foam extinguishers and the pumps in EAS pump tanks, normally made of copper, were made of steel coated with porcelain enamel. Since enamel is subject to cracking, these parts require frequent and careful inspection.

Pump packings, gaskets, and similar parts ordinarily made of natural rubber were made of synthetic rubber. Hose of all EAS extinguishers were made of reclaimed rubber. Loss of flexibility, with consequent cracking, must therefore be anticipated.

Though unimportant to the proper functioning of an extinguisher, the nameplate appearing on an extinguisher is vital to the identification of the device. The name was put on the EAS units by decalcomania rather than by soldering or welding a metal nameplate to the shell, as on standard units. No satisfactory method for permanent application of the decals was ever found. It is necessary, therefore, to make sure that the nameplate has not peeled off or that the extinguisher type is identified by some other means, so that when fire breaks out the extinguisher used will be suitable for the class of fire involved.

"5% MORE PRODUCTION in Carding"

"50% FEWER ENDS DOWN in Spinning"

"50% LESS RESIDUAL OIL after Scouring"

Fybrol 1115

the ORIGINAL Water-Soluble, Self-Scouring Wool Oil

*PATENTS PENDING

FYBROL 1115—introduced only a year ago—is now standard in mill after mill. Such a lubricant was needed—self-scouring, water-soluble, non-gumming, uniformly penetrating—Fybrol 1115 meets all requirements. All along the line, FYBROL 1115's better coverage improves mill efficiency. For example: At least 50% less residual oil after scouring—in most cases soap is entirely eliminated. Increased card production—at least 5%. Improved spinning—50% fewer ends down. Results: Better fabric . . . better handle . . . better dyeing and finishing.

FYBROL 1115 is easier to use and more economical than conventional wool and worsted oils . . . practically foolproof . . . proved by experience in mill after mill, on all types of blends.

Try, then standardize on FYBROL 1115 . . . unexcelled for its wetting and detergent properties. Send for latest performance data and trial order.

NOTE—FYBROL 1115 performance results quoted above are from actual mill experience and in individual cases may vary to a greater or lesser degree depending on conditions.

Textile Chemicals Division,
L. SONNEBORN SONS, INC.,
Dept. W10, 88 Lexington Ave., New York 16, N. Y.

We are interested in FYBROL 1115 for processing Wool . . . Worsted . . . Please send us latest mill performance data on FYBROL 1115 . . . Ship us . . . 54-gal. drum(s) of FYBROL 1115 at current price.

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Kinks AND SHORT-CUTS

A $25 SAVINGS BOND FOR YOUR IDEA

A $25 Saving Bond will be awarded each month for the most useful "kink" published in this department. This contest is open to all readers of TEXTILE WORLD, and there is no limit to the number of entries any one person may make.

Contributions must be received not later than the last day of the month to be eligible for the award for the second succeeding month. Items may pertain to production methods, mill engineering, safety, cutting costs, improving quality, speeding up production, in brief any little device, stunt, kink, or short-cut which you have tried out in your own mill and which you believe will be helpful to other mill men. Items should contain sufficient detail to permit other mill men to utilize the ideas in their own operation. Previously published material is not eligible for the award. Judges of the contest are the editors of TEXTILE WORLD.

TEXTILE WORLD shall have the right to publish any items submitted. Items which are accepted will be paid for at our regular rate for this type of matter with extra payment for appropriate sketches or photographs. The sketch you submit need not be a finished drawing.

In writing to this department, give your real name and address as evidence of good faith and to permit payment for items accepted. Please advise whether your name may be used with the kink.

Contributions should be addressed to: Technical Editor, TEXTILE WORLD, 330 West 42nd St., New York 18, N. Y.

★ **SAVINGS BOND PRIZE FOR OCTOBER**

(August Contest)

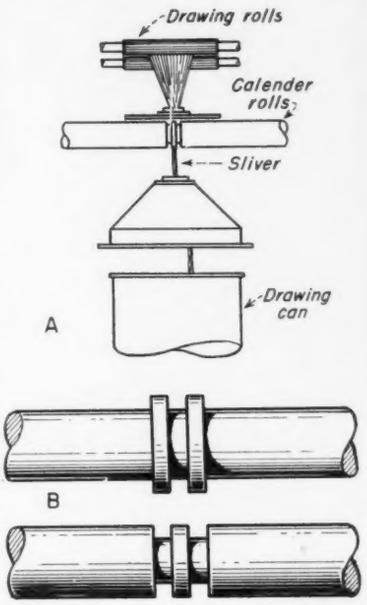
Tongue and Groove Compresses Drawing Sliver

By devising a tongue-and-groove arrangement for the calender rolls of our drawing frames at points directly beneath the trumpets, we have been able to put 17% more drawing sliver in our 12-in. cans, thus reducing the drawing-frame doffing task by that amount. An additional benefit has been a reduction of the amount of loose lint at the fly frames.

In making the tongue and groove, illustrated in the accompanying sketch, we removed the calender rolls from the drawing frame and had the machine shop build up the working sections of the back calender roll with a metallizing gun. The built-up sections of the roll were then machined so as to form grooves, shown in sketch B, of sufficient width to receive $\frac{1}{8}$-in. tongues. The depth of the grooves was $\frac{1}{8}$-in. plus a clearance of 0.004 in. On either side of each groove, the built-up section was machined to leave a shoulder $\frac{3}{8}$ in. wide.

Two grooves were cut in the front calender roll at working points corresponding to the $\frac{3}{8}$-in. shoulders on the back roll. These grooves are slightly deeper than the height of the shoulders, so that the shoulders do not touch the bottoms of the grooves.

The tongue that remains between each pair of grooves on the front roll fits into the groove on the back calender roll. As drawing sliver is taken from the trumpet, it is confined in the groove and compressed by the action of the tongue. *(K-556) Ralph Taylor, Columbus, Ga.*

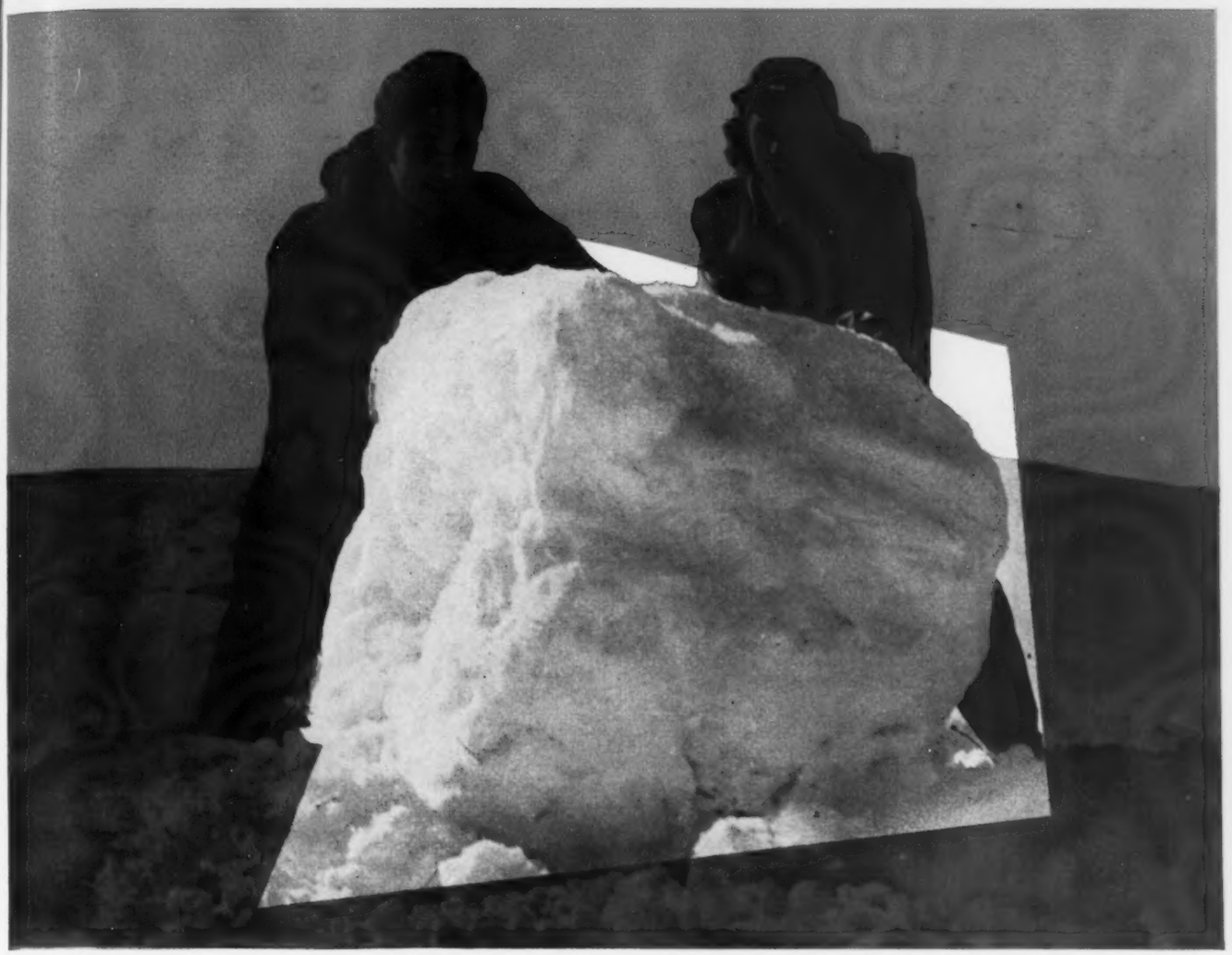


As drawing sliver is taken from the front drafting roll and through the trumpet, it is compressed by the action of the groove on the back calender roll and the tongue on the front calender roll, so that 17% more sliver is placed in the 12-in. can.

Tricot Daubers Smoothed With Cotton Thread

The notches on 28, 30, and 32 gage tricot warp-threading daubers are apt to become rough through use; and after they have been recut with a knife-blade file and buffed, they still have a tendency to cause the warp threads—especially rayon—to hang. To avoid this condition, I use lengths of No. 50 cotton thread for smoothing out the rough places remaining on the daubers after they have been buffed.

Clamp the dauber in a saw vise, and place a spool of the cotton thread on the floor. Hold the left hand about a foot below the teeth of the dauber, and wrap one end of the thread around the left thumb. Run the other end of the thread over the first notch at one end of the dauber, down on the other side of the dauber, and under the left forefinger. Now run the thread back



A WARP SIZING STARCH THAT STOPS *Fuzz Balling*

NALEX is a warp sizing starch with a chemically controlled viscosity. It insures a uniform sizing forming a strong, smooth and continuous film on fine combed cotton yarns and worsted yarns. It minimizes fuzz balling at the reeds, harness and drop wires.

Viscosity largely controls the degree of size pick-up. Too low a viscosity means insufficient size, inadequate film — and excessive shedding that causes fuzz balling, warp breakages and expensive burling. Too high a viscosity means excessive size, insufficient penetration and hard, brittle yarns lacking the flexibility needed for good weaving. Too varying a viscosity means those soft spots so dreaded by all weaving superintendents.

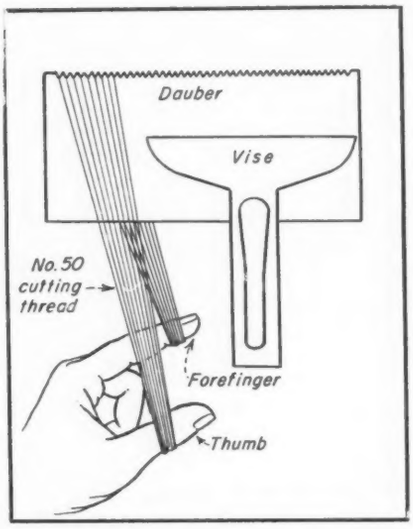
NALEX — as a result of its chemically controlled viscosity — retains its uniformity in the size box. It sizes uniformly, penetrates deeper, adheres all loose fibers securely, and increases the tensile strength of the yarns. It has increased weaving efficiency in leading mills from 10% to 15% — over ordinary warp sizing. Ask for a NALEX demonstration — NOW! A National technician can run off a few beams without upsetting your regular production.

National also produces: FIBERTEX for textile finishing; AMBERTEX, a heavy-bodied thickener for white discharge, direct and vat color printing; KOVAT, a cold water swelling gum for all textile printing; FLOJEL, uniform, thin boiling corn starches in all standard fluidities; HOOSIER Pearl Cornstarch.

Offices: 270 Madison Avenue, New York 16; Boston, Philadelphia, Chicago, Indianapolis, New Orleans, San Francisco and other principal cities. In Canada: Meredith, Simmons & Co., Ltd., Toronto. In Holland: Nationale Zetmeelindustrie, N. V. Veendam.

National
STARCH PRODUCTS

STARCHES — *AND SPECIALTIES WITH EASILY DEMONSTRATED SUPERIORITY*



After the notches have been threaded, work the cotton threads back and forth through the notches to smooth out the rough places remaining after filing and buffing.

up the same side of the dauber, over the second notch, and down under the thumb. Repeat these motions until about 2 in. of the dauber is loaded. Break the thread. Remove the threads from around the forefinger and hold them in the right hand. Hold the threads around the left thumb in the left hand and pull the threads back and forth through the notches, keeping the threads close to the sides of the dauber. Work the threads back and forth until the notches are smooth.

Care must be taken not to put too much tension on the threads during the first 25 or 30 strokes in order to avoid breaking the threads while the notches are still rough. Usually, about 100 strokes of the threads are sufficient to remove the burrs and sharp edges from the notches. An abrasive compound may be used, but its use is not necessary. *(K-568) Ellsworth Simpson, Walton, N. Y.*

Overhead-Cleaner Track Kept Clean by Brushes

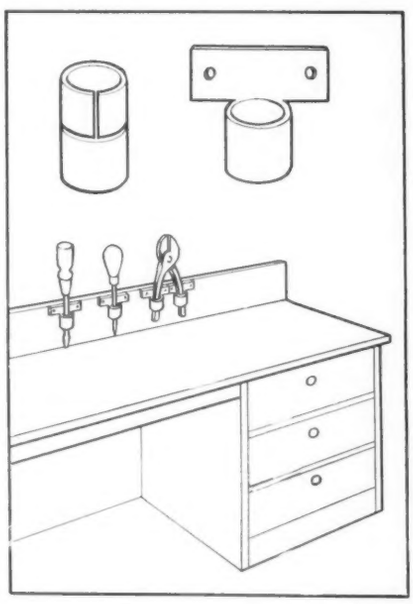
After several years of use, the overhead cleaners in our spinning room began to give us trouble because of sparks now and then setting fire to a collection of lint on a track. Our method of cleaning the tracks consisted of blowing them off daily with compressed air, but frequently a lint collection would drop from overhead onto a track or be blown onto a track during the scheduled cleaning of the frames. Sometimes such a wad of lint would catch a spark from a cleaner, drop down on a frame, and cause a serious fire.

To keep the tracks clean and guard against fires from this source, we attached small brushes to various points of the cleaners. These brushes extend a few inches in front of the cleaners and bear against the various rails which compose the tracks and supports for the cleaners. The brushes keep the tracks free of lint and have almost eliminated fires caused by the cleaners sparking. *(K-570)*

Holders for Small Tools Made From Lease Rod

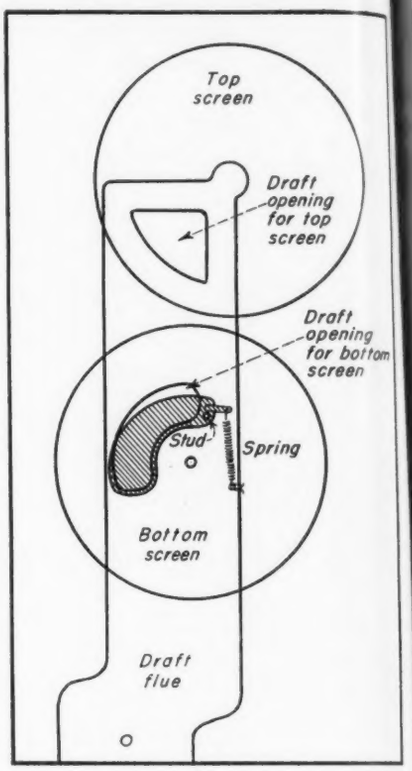
Many mechanics prefer tool racks placed on their bench backboards, so that pliers, screwdrivers, wood chisels, etc., can be kept in a convenient position. Strips of narrow leather are often used for this purpose, as well as sheet metal and other materials. However, one of the best racks the writer has seen was fashioned from a discarded brass lease rod.

The brass rod was cut into 2-in. sections, and a slot was cut crosswise through each of these sections. From the center of this semicircular slot, one end of the 2-in. section was split so that the sides of this part of the section could be opened, flattened out, and screwed to the backboard as shown in the sketch. The unsplit end of the section was used as a holder for small tools. *(K-560)*



Short sections of brass lease rods can be made into holders for small tools by flattening out one end of them and fastening these ends to the backboard of the workbench.

Damper for Picker Screen Is Controlled by Spring



The damper which controls the amount of cotton thrown to the bottom picker screen is held in position by a spring. The damper must be held down while the screen is being cleaned, but the spring automatically returns the damper to its proper position after the screen has been cleaned and the damper released.

In order to eliminate split laps on a cotton picker, it is necessary to throw more cotton to the top screen than to the bottom screen. This purpose is accomplished, of course, by leaving the draft opening to the top screen completely open and keeping the bottom draft opening almost closed.

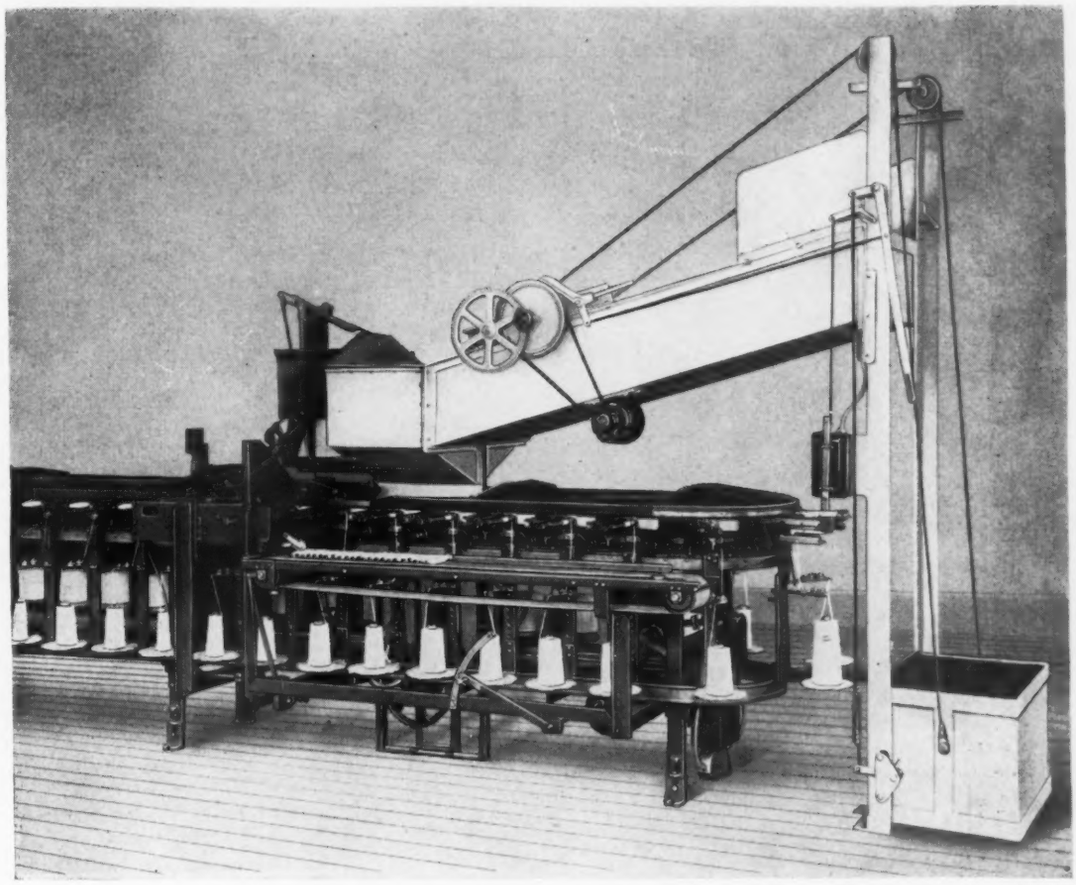
However, both screens must be cleaned daily, and large openings at the top and bottom are necessary. A damper is provided for partially closing the bottom opening after the screen has been cleaned and before the picker is put back into operation.

Frequently, an operator either leaves the damper out of position altogether or does not properly adjust it to regulate the distribution of cotton to the two screens. To avoid split laps as a result of this neglect, I have installed automatic dampers on all our pickers.

The damper consists of a piece of sheet metal (plywood would also serve satisfactorily) cut to fit over the draft opening as shown in the accompanying sketch. In its normal position, the damper completely closes the lower

AUTOMATIC TRAVELING SPINDLE FILLING WINDER

FULL AUTOMATIC OPERATION



Our Standard Rayon Quiller has 100 spindles and takes the regular 7⅜", Draper head, bobbin wound about 1" in diameter and runs at a spindle speed of 5,000 R.P.M.

The wound bobbins are handled very gently and placed on a wide apron, side by side, where they can be examined and marked and then placed directly on pin boards.

The empty bobbin handling is wholly automatic, the bobbins being delivered to a box which rises and dumps itself and returns automatically, and there is a large reserve of about 4,000 bobbins in the hopper and chute.

The wind on the bobbins is of a new type, overlapping layers, so that an excellent weaving bobbin is obtained without over-tensioning.

ABBOTT MACHINE COMPANY

WILTON, N. H.

Southern Representative, Mr. L. S. Ligon, Greenville, S. C.

KINKS & SHORT-CUTS

(Continued from page 150)

part of the opening and leaves only a slit, somewhat triangular in shape, open at the upper side and end of the opening.

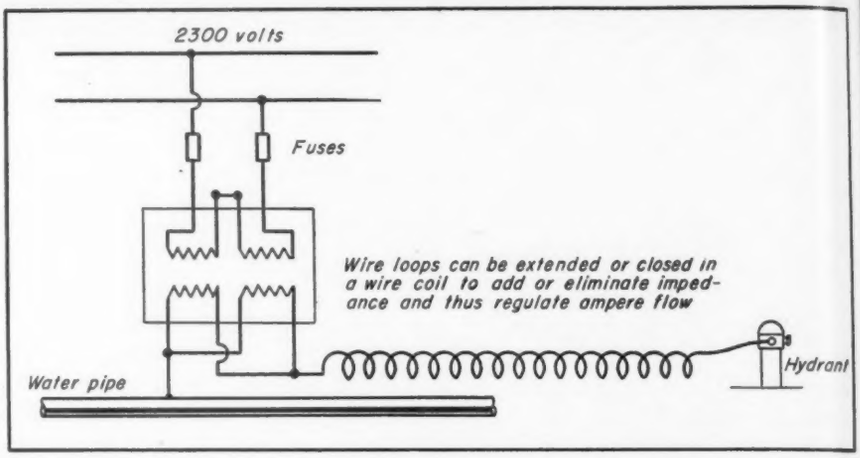
A stud, which holds the damper in place and upon which the damper pivots, is placed through the side of the draft flue and through the upper end of the damper. A spring connects the upper end of the damper to a hook eye placed in the side of the flue at a point below the damper.

To clean the bottom screen, pull down the damper and hold it until the screen has been cleaned. Then release the damper; the spring pulls the damper back into operating position. *(K-569) Dan Hurst, Dalton, Georgia.*

Chart Eliminates Testing Leads of Multispeed Motor

There is probably no more tedious or aggravating job than that of testing out the numerous leads of a multispeed motor when wire identification of motor-data plates are missing. Having experienced that type of trouble after a flash fire, I prepared a chart that has saved much time and trouble. Metal tags stamped deeply are suggested for the lugged motor leads. *(K-557)*

Motor Speeds (r.p.m.)	Eliminate Wire Jumpers on Contactor Panel	Motor Leads Connected
1200–1800	b and d	T1–T30, T2–T31, T3–T32, T7–T37, T11–T33, T12–T34, T13–T35, T17–T37.
900–1800	b and c	T11–T33–T37, T12–T34–T40, T13–T35–T40, T14–T30, T15–T31, T16–T32, T17–T36–T42.
900–1200	b and c	T1–T33, T2–T34, T3–T35, T12–T40, T13–T41, T14–T30, T15–T31, T16–T32, T17–T42.
600–1800	b and c	T1–T37, T2–T40, T3–T41, T4–T30, T11–T32, T12–T34, T13–T35, T17–T36.
600–1200	b and c	T1–T33–T37, T2–T34–T40, T3–T35–T41, T4–T30, T5–T31, T6–T32, T7–T36–T42.
600–900	a and c	T1–T37, T2–T40, T3–T41, T4–T30, T5–T31, T6–T32, T7–T42, T11–T36, T12–T38, T14–T33, T15–T34, T16–T35, T17–T43.


2300 volts
Fuses
Wire loops can be extended or closed in a wire coil to add or eliminate impedance and thus regulate ampere flow
Hydrant
Water pipe

Typical connections for stepping down a.c. current to apply to a frozen water line. By opening the hydrant and letting the warm water run off, the thawing of the pipe will be speeded up.

Thawing Pipes Speeded By Using Electricity

Mills which have trouble in winter with water lines freezing will find that electricity is the fastest and most easily applied method for thawing the frozen lines. As the current flows through the pipe, heat is generated and causes the outer surface of the ice formation to melt.

Both a.c. and d.c. current may be used, but the techniques vary slightly. If a.c. current is used, the voltage is usually stepped down; if d.c. current is used, the current is usually supplied by welding generators to avoid voltage fluctuations. Under ordinary conditions, 100 to 200 amperes are used for pipes ¾ to 2 in. in diameter and 200 to 300 amperes for 2- to 6-in. pipes.

If a.c. current is used, the secondary lines are connected to the water line and the current circulated through the pipe, as shown in the accompanying sketch. An important precaution is to isolate the frozen line from the rest of the water system, so that there will be no danger of the current passing into the plant.

While many variable factors influence the thawing time of frozen pipes, these figures will serve as an approximation:

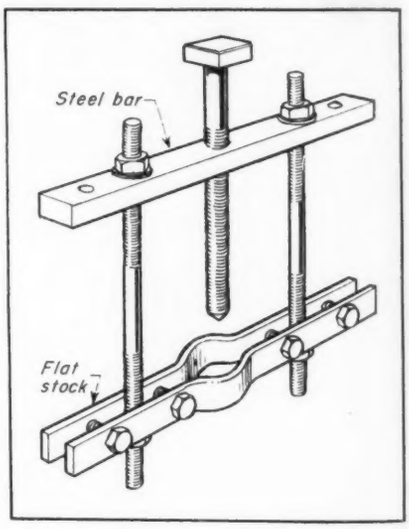
Pipe size (in.)	Amperes (d.c.)	Minutes to thaw
½	120	22
¾	210	19
1	220	30
1½	300	32
2	340	40
3	410	60
4	500	75
6	525	120

(K-585) Paul C. Ziemke, Oak Ridge, Tenn.

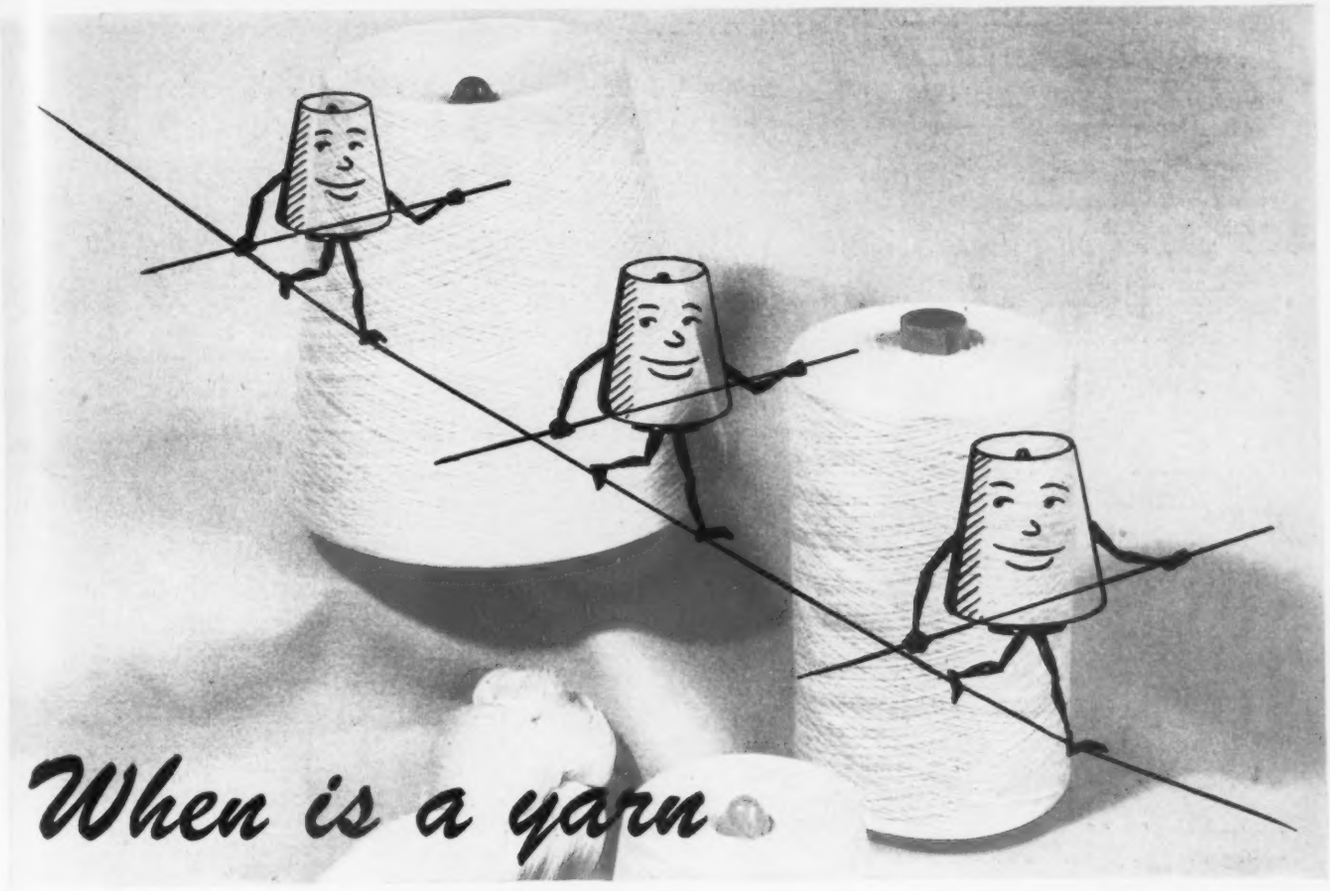
Loom Handwheel Puller Prevents Damage to Wheel

A puller should always be used to remove sticking handwheels or gears from a loom. If the wheel is driven off with a hammer and bar, there is danger of either breaking the wheel or springing the crankshaft, especially on the newer-type looms which have an extended crankshaft end.

A puller for this purpose may be constructed from material usually on hand in a mill. Material required is



To use this puller, remove the four bolts which hold the two pieces of flat stock together, and place the pieces of flat stock behind the handwheel, with the curved sections in centers around the shaft. Extend the threaded rods through the handwheel, between the spokes, and place the steel bar on the threaded rods. Tighten the rods and the square-head screw until the end of the screw is resting firmly against the end of the shaft which supports the handwheel. Strike the head of the screw to break the handwheel loose from the shaft.



A BETTER BALANCED PERFORMER?

DIXIE MERCERIZING CO. CONTROLLED MANUFACTURE CHATTANOOGA, TENN.

1. When it is strong, of even texture—for smooth operation of knitting machinery.

2. When it is soft, lustrous, absorbent—for consumer eye appeal, for solid comfort to the wearer.

3. When it is produced only under controlled standards of manufacture that assure top quality—for products that sell faster . . . and keep selling.

Made of Durene® multi-ply mercerized combed cotton yarn
4 WAYS BETTER than ordinary cotton yarns
EXTRA COMFORT ---more absorbent
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EXTRA SERVICE ---easy to wash
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You will find all of these features characteristic of

Dixie Durene
A PRODUCT OF CONTROLLED MANUFACTURE

Dixie MERCERIZING COMPANY, CHATTANOOGA 1, TENNESSEE

KINKS & SHORT-CUTS
(*Continued from page 152*)

one bar of steel 16x2x1½ in., two pieces of flat stock 16½x1 and ¾x⅝ in., two threaded rods 18x⅝ in., and one square-head screw 12x1 in. threaded and pointed at the end. To construct the clamp, heat the flat stock and bend as shown in the accompanying illustration.

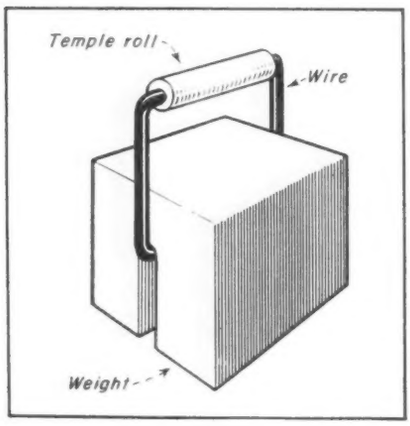
In operation, the clamps are tightened on the shaft back of the wheel hub with the threaded rods extending through the wheel spokes. After the rods and the square-head screw have been tightened, a few sharp blows on the square head of the screw will usually loosen the most stubborn handwheel.

A puller made about half this size is useful in removing head-motion handwheels and other small wheels and gears. *(K-493) Eugene P. Schremp, Lawrence, Mass.*

Homemade Handle Lifts Tension Weights

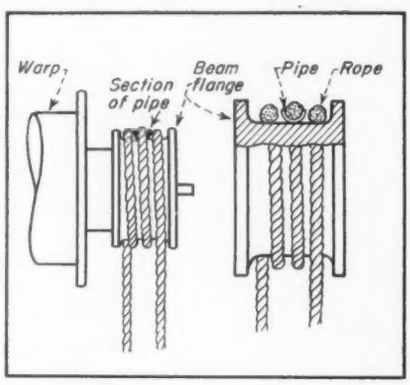
Handling the large, square weights used on loom tension bars is frequently an awkward task because of the shape of the weights and the lack of comfortable working space. Often an operator receives a strained back from doing this job.

One of the best methods of handling such a weight is to use a special grip for lifting. A grip, similar to the one shown in the accompanying sketch, can be made of discarded harness mounts and a rubber temple roll. The roll is placed over the wire, and the wire is bent so that it can be slipped through the center channel of the weight and twisted to form a square-shaped handle. Using such a grip, an operator can lift a weight with one hand, thus eliminating much of the accident hazard usually connected with this task. *(K-562)*



Square tension weights can be handled more easily by using a grip made of heavy wires and a rubber temple roll.

Tension-Rope Separator Prevents Rope Sticking



If the high humidity of a weave room causes tension ropes on a warp flange to stick, the trouble can be remedied by inserting under the middle rope a 1-in. piece of pipe split lengthwise.

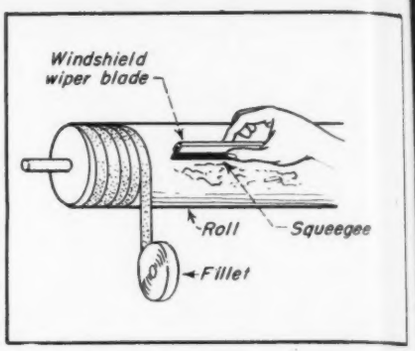
When loom tension ropes become sticky from too much humidity or from the lack of powder, it is a good practice to keep watching the weights in order to avoid barrè cloth or other imperfections. A better practice, however, is to prevent such defects by the use of the device shown in the accompanying sketch.

A 1-in. length of pipe is split through the center to make two pieces. One piece is placed under the center lap of rope around the beam flange and keeps the laps separated, thus preventing the ropes from sticking together. Powder, of course, is sifted between the laps to ease the frictional action of the ropes and helps the beam to turn more smoothly. If the flange is smooth, the short section of pipe will remain in this position. *(K-563)*

Windshield Wiper Blade Spreads Glue Effectively

When applying glue to rolls, race plates, or other surfaces that will be covered with sandpaper, cloth, etc., it often becomes a problem to apply just the right amount, so that there will be no excess glue squeezing between the laps or out from under the edges of the sandpaper or cloth. Such glue jobs can be helped along by using an automobile windshield wiper blade.

Apply the glue and use the rubber squeegee to spread it in a thin, even film over the surface. This tool prevents waste of glue and permits the glue to be applied uniformly. *(K-559)*

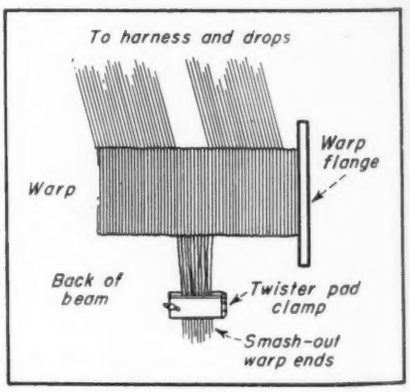


The use of an automobile windshield wiper blade for spreading glue permits a cleaner, smoother application of the glue.

Holding Warp Ends Important on Smash-Out

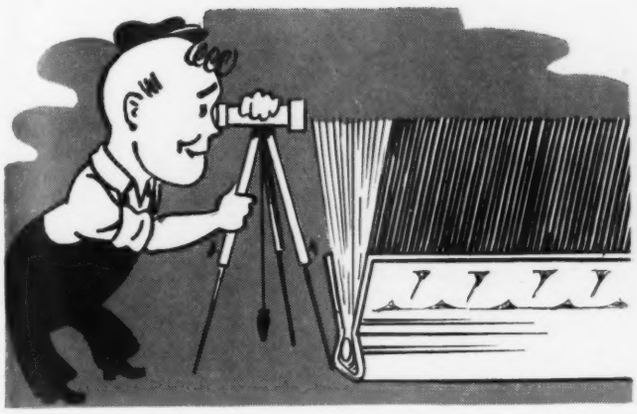
On a smash-out involving a large number of ends, it is difficult for the operator to match the exact warp end back on the beam with its correct drop wire and heddle. If care is taken in bringing the broken ends straight off the beam, the ends can be matched near their respective positions and troublesome stickers avoided.

In order to keep smash-outs as nearly in position as possible, it is wise to keep the ends taut from the beam. If a smash or cut-out sticker causes the disturbances of many ends, brush the warp ends down as nearly in line as possible. Now place a clamp secured from the twisting-machine operator securely on the ends. The rubber pads of the clamp will prevent any loosening of individual ends and will allow the ends to be picked out one by one as they are tied up and drawn into the drop wires and heddles. *(K-561)*

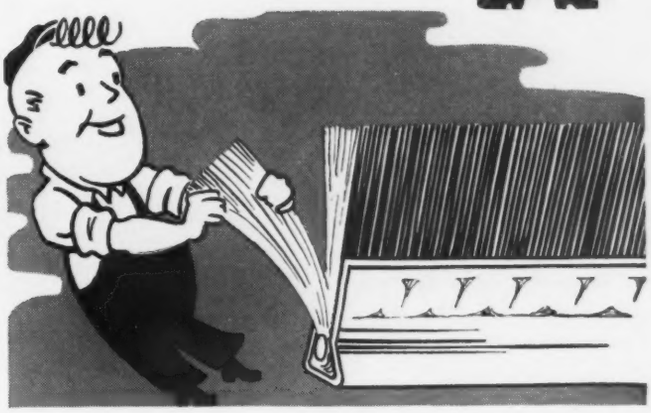


A clamp equipped with jaws covered by rubber pads is useful to a smash hand in repairing a smash-out.

THIS IS WHY FULLER-GRIPT BRUSHES SAVE YOU MONEY



UNIFORM DIMENSIONS. Fuller-Gript brushes are accurately manufactured so that the dimensions are uniform throughout the length of the strip. Result — more efficient brushing action.



NO SHEDDING. Brush material is rolled under heavy pressure into a heavy gauge metal strip where it is held in a vise-like grip. Filler material cannot fall out. Result — a more efficient job.

CORROSION-RESISTANT. Another reason why Fuller-Gript brushes last longer is because the metal "backbone" is highly resistant to both chemicals and water. Result — a brush that lasts longer.

EASY TO INSTALL AND REPLACE. Simple anchoring devices enable your own maintenance men to install most brush strips in a few minutes so securely that they will not fly off high-speed cylinders.

* * *

Fuller-Gript Brushes can be furnished in straight strips or spirals of any length, they can be coiled around cores ranging from one-quarter inch to three feet in diameter.

Give our engineers an opportunity to specify the correct application of Fuller-Gript Brushes to your equipment. We will be pleased to send you a sample Fuller-Gript strip. No obligation.

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PROTECTING, PRESERVING THE ORIGINAL QUALITY OF THE YARN

Why is the Universal Precision Cone used far more than any other type of cone for synthetic filament yarn?

REG. U. S. PAT. OFF.

It is precise-wound, compact and secure, uniform in density throughout. Its shape provides free delivery without plucks or without dragging over the nose end. It contains a maximum amount of yarn, wound under accurately controlled tension, carefully inspected, with imperfections removed.

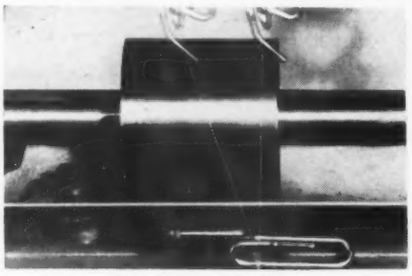
This Universal Precision Cone will withstand abuse in handling and will deliver yarn freely, in perfect condition, with minimum interruption.

You can identify it by the flat base, exclusive with Universal.

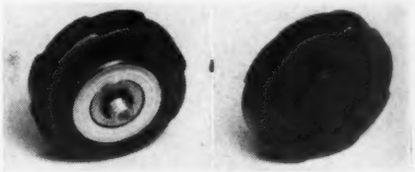
Universal Winding Company at Providence, Boston, Philadelphia, Utica, Charlotte, Atlanta, Chicago, Los Angeles, Montreal and Hamilton. See our Catalog in TEXTILE WORLD YEARBOOK.

A Universal Feature Contributing to Cone Quality

For conditioning rayon yarn with oil, the No. 50 Emulsion Attachment provides a means of constantly and accurately changing the angle of contact between yarn and Emulsion Roll, so that oil pickup is uniform despite increasing yarn speed as the winding package increases in diameter.



Double exposure showing changed angle of the yarn across the roll.



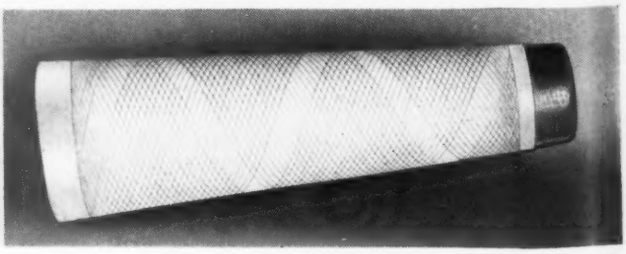
Stopping Lever Wheel
Left, The face Right, The back

A Universal Feature Contributing to Economical Winding

Typical of Universal's engineering and manufacturing is the No. 50 Stopping Lever Wheel. It is turned from bar steel, and the serrations are uniformly cut on a gear shaping machine. It is case hardened, and finally lapped on the inside face for smoothness.

23.6.7

MORE THAN 90% OF ALL SYNTHETIC FILAMENT YARN ON CONES IS PRECISE-WOUND ON THE FLEXIBLE 50



LETTERS to Pete & Bill, discussing material in this department, are paid for when published. Suggestions for the Pete & Bill dialogue will also be paid for if used. If these pages interest you, contribute something to interest others. Address PETE & BILL, Textile World, 330 West 42nd St., New York 18, N. Y.

Pete & Bill

SUPPORTING SOCIAL EVENTS

Should department heads cooperate by attending social events given by or for the employees?

GOT YOUR INVITATION FOR THE EMPLOYEES' SUPPER, BILL?
YES, AND THE ANSWER'S R.S.V.P.—REJECTED S'IL VOUS PLAIT—IN ENGLISH THAT MEANS "NOT GOING."
1
THAT SOUNDS UNCOOPERATIVE, BILL. THESE SUPPERS BUILD MORALE, AND I WANT TO ENCOURAGE GOOD FEELING.
SUPPERS DON'T RUN MACHINERY AND IF YOU WANT TO JOIN THAT PANTYWAIST CLUB, O.K., PETE. I SAY LET THOSE FRONT-OFFICE BOYS DO THE CAKE-WALKING; I GET PRODUCTION.
2
BILL, IT'S A FOREMAN'S RESPONSIBILITY TO HELP IN INDUSTRIAL RELATIONS—THE LEAST YOU CAN DO IS ADD YOUR PRESENCE.
YOU'RE WRONG, PETE, RUNNING A MILL TAKES NONE OF THAT PINK LEMONADE. HERE'S JOE—I BET HE AND THOSE PRACTICAL READERS OUT THERE WILL AGREE WITH ME—NOT WITH YOU.
3
NO, I DON'T AGREE, BILL—I'LL BE THERE WITH THAT PINK LEMONADE.
WELL, I'LL STILL WAGER 5 TO 1 THAT THOSE EXPERIENCED MILL MEN OUT THERE WILL WRITE ME THAT IT'S ONLY WHAT YOU DO ON THE JOB THAT COUNTS. WHAT SAY, READERS?
4

Letters From Readers

Borrow Help Only on Mutual Consent

"Swapping Employees"
(Pete & Bill, July 1946)

Dear Pete & Bill:

Borrowing of help from another department should be permitted only by mutual agreement between department heads. Borrowing is necessary in cases of emergency to insure a steady flow of production throughout the plant. During the war, it was generally practiced as a matter of necessity and should be continued in these unsettled times.

If the practice of borrowing help is abused by any particular department, the matter should be remedied. (PB1001)

Quality-Control Meetings Are Essentials

"Quality-Control Meetings"
(Pete & Bill, June 1946)

Dear Pete & Bill:

Quality-control meetings are essential in mill operation. Defects in manufacture cannot be ironed out just by word-of-mouth excuses, but a discussion of what steps can be taken for elimination of such defects will go a long way toward producing a better product.

Although it is usually impossible to pin down the exact cause of defects (due to varying factors entering from the raw stage onward), nevertheless, by continued sessions discussing the likely causes for defects, corrective measures will undoubtedly be developed.

This outcome can be accomplished only by insisting upon overseers' discussion meetings.

It is wise for a mill management to discuss mill operation, conditions, and quality-control with the heads of all departments at regular set times. In order to acquire best results in

operation, it is necessary for employer and employee to work hand-in-hand. (PB 1002)

Skill, not Relationship, Basis for Hiring

"Supervisors' Kinfolk"
(Pete & Bill, May 1946)

Dear Pete & Bill:

When Bill said he didn't hire his supervisor's relatives because he felt it would cause friction and lower the the morale in his department, he was right as far as his beliefs were concerned. Relatives working in my own department resulted in the very conditions that Bill feared, such as charges of favoring the relative with better work, etc.

As Pete pointed out, the troublesome conditions Bill feared were mostly on the surface. Highly efficient workers are usually the targets of favoritism-charges made by less capable employees. A worker's production records generally show if there is any merit to the charges.

My relatives can work again for me. (PB 1003)

Exchange of Ideas Marks Progress

"The Mill Door—Closed or Open?"
(Pete & Bill, Feb. 1946)

Dear Pete & Bill:

Perhaps this illustration which actually happened in a southern textile plant will help Pete & Bill as well as others. I knew both of the men involved, who are now dead; one was owner of the plant; the other a card-room foreman.

One day the owner was walking around the card room making an individual inspection which it was his habit to do in all departments. He suddenly asked the foreman how many mills he had been in, and how often he visited other mills. The foreman thought for a second, and confessed he never had time to visit other mills.

This may sound unfair, and rather blunt, but upon hearing the foreman's reply, the owner immediately told him that he could no longer use him.

I heard frequently of that foreman's whereabouts in the following years, and before his death he had been foreman in some of the largest plants in the country and had done very well.

Had he remained on his original job in the same rut, retarding his progress as well as that of his department, neither he nor the department would have made much progress. (PB1004)

Books of Interest

Merit-Rating of Employees and Job Evaluation

JOB EVALUATION AND EMPLOYEE RATING, by R. C. Smyth and M. J. Murphy; McGraw-Hill Book Co., New York; 256 pages, $2.75.

This volume by the director of industrial relations of Bendix Radio Division of Bendix Aviation Corp., presents practical data on applications of job evaluation and merit rating. The program is outlined in such a way as to stress its effective functioning, nevertheless it is in broad terms which adapt its application to any operation. It analyzes the factors which go into a job such as skill, effort, responsibility, working conditions, etc., and gives bases for grading labor, determining wage scales, and developing and administering the merit-rating plan.

Progress in Research on Elastomers

ADVANCES IN COLLOID SCIENCE, initiated by E. O. Kraemer; Interscience Publishers, Inc., 215 Fourth Ave., New York 3, N. Y.; Vol. I, $5.50; Vol. II, $7.00.

In this collection of contributions from outstanding scientists, progress in the field of rubber and synthetic elastometers and related polymer research is covered in detail. A great diversity of subjects is treated, each by an authority in that specific field. Comprehensive bibliographies are given.

What Industry Can Get From Electronic Devices

ELECTRONICS IN INDUSTRY, by G. M. Shute; McGraw-Hill Book Co., New York; 462 pages, $5.00.

The purpose of this book is to provide a broad introduction to the use of electronic circuits and equipment. It outlines the industrial uses of tube circuits and gives detailed explanation of a large number of electronic devices now serving in various plants. No previous knowledge of electronics is assumed on the part of the reader, and the equipment considered is that which is designed and built by leading manufacturers. The volume is not aimed at aiding those who would build their own equipment. After extensive coverage of the services which electronic devices will render, there is a final chapter on related, but non-electronic, devices.

Selling Textiles

SALES PROMOTION IN THE TEXTILE INDUSTRY, by James C. Cumming; Fairchild Publishing Co., New York; 132 pages, $3.00.

In this book, the author sets forth the serious problems of merchandising, distribution, and promotion which will be encountered in the industry during the next ten years. He outlines the promotional techniques which are necessary for the textile industry to embark on the business-getting methods that have produced sales for foods, drugs, automobiles, and similar products in past years. He surveys the outstanding promotional techniques being employed successfully today by a number of textile firms.

Educative Material Guide

SUPPLEMENTARY TEACHING MATERIALS FOR SCIENCE; National Science Teachers Association, 1201 16th St., N.W., Washington 6, D. C.; 62 pages, $1.00.

This publication presents specifications for commercial supplementary teaching materials for pre-college classes in science. It restricts its scope to booklets, charts, exhibits, models, and pictures. The survey was sponsored by the National Better Business Bureau. It is an organized guide to industrial firms which may be planning the issuance of material aimed at consumer education.

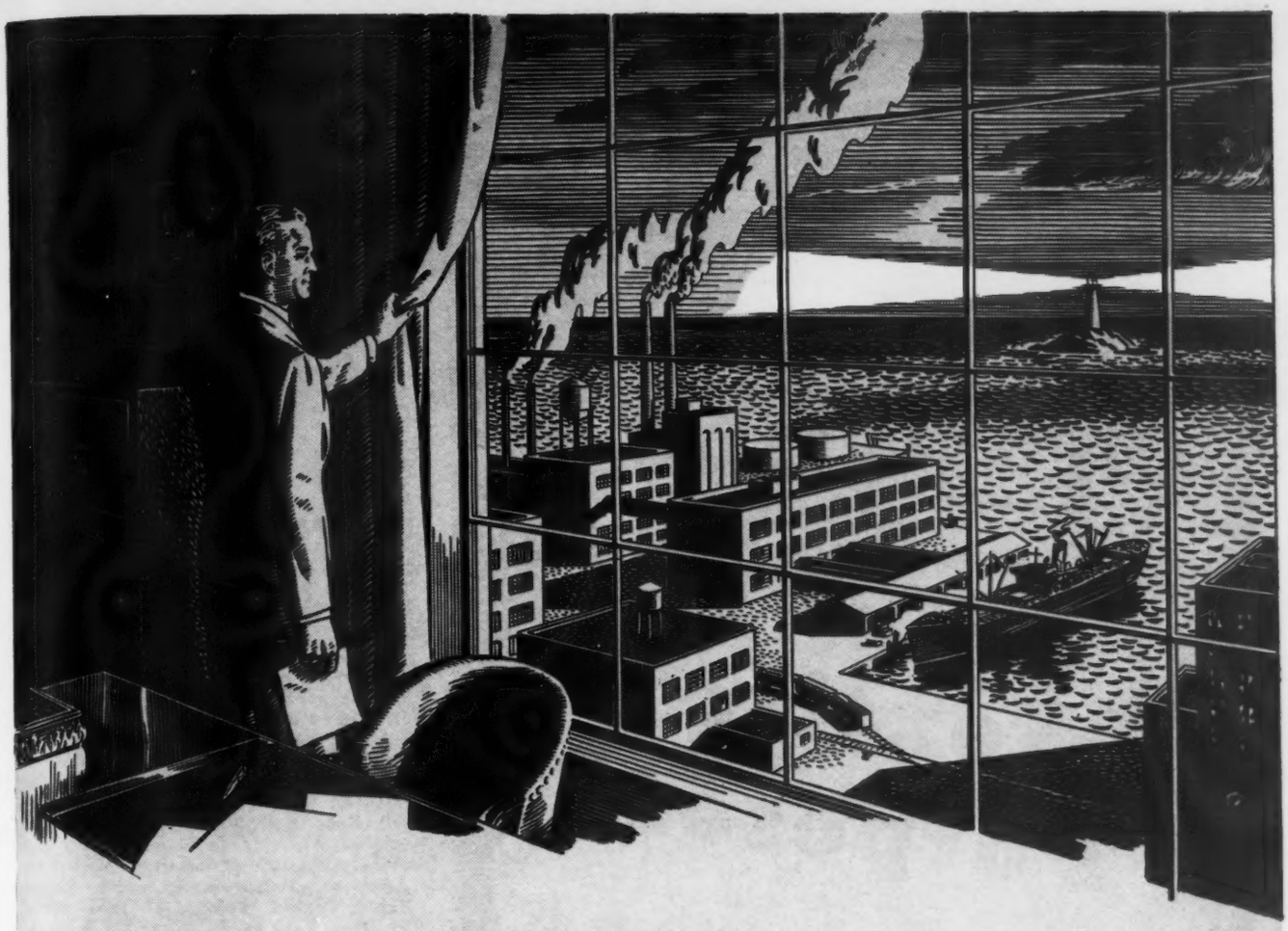
Other Publications

PROCESSING OF DOMESTIC FLAX FOR TEXTILE USE, by J. L. Taylor, Associate Professor in Textile Engineering, Georgia School of Technology, Atlanta, Ga.; 2 vols., I Decortication, II Retting and Degumming; 76c. each.

SETTING UP AN APPRENTICESHIP PROGRAM; United States Department of Labor, Apprentice-Training Service, Washington, D. C.

FORMS OF NATURE, by Horst; published by J. J. Augustin, New York.

YEARBOOK & OFFICIAL REGISTER OF MEMBERS, American-Hellenic Chamber of Commerce, 8 America St., Athens, Greece.



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Business records show a steadily increasing number of failures. Careful, accurate credit checking is of first importance to avoid serious losses. By the use of our CREDIT GUARANTEE you can eliminate this business hazard and still reach a maximum sales volume.

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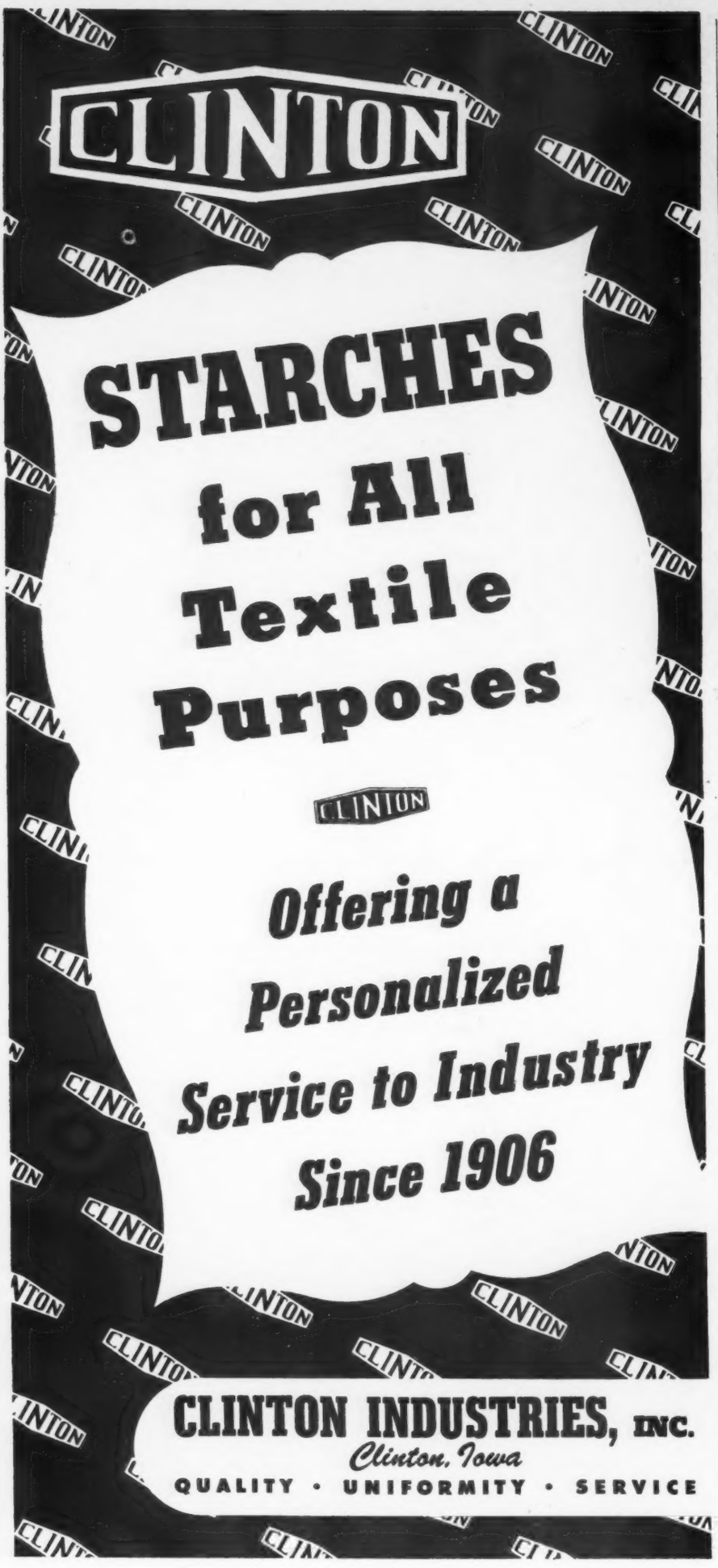

Round Table

FOR EXCHANGE OF IDEAS

The Round Table is designed to supply a meeting place where mill men can discuss problems among themselves. It is open to all readers for discussion of subjects relating to mill management and operation. Names of contributors to the Round Table will be held confidential if so requested, but sign contributions with your real name and address as evidence of good faith and to permit payment for items published. Address contributions to: Editor Round Table, Textile World, 330 West 42nd St., New York 18, N. Y.

Fancy-Goods Weavers Need Design of Reeding

In reading the Questions & Answers department in the July issue of TEXTILE WORLD, I came across Question 9103 ["Weavers Need Help in Replacing Broken Ends"] in which the writer states that his weavers have trouble in drawing in broken ends when there are two or more ends out on a fancy-goods warp. He states that up to eight harnesses are used.

To overcome the trouble he is having, I suggest that he adopt the following practice:

Designate the shafts by numbers so that the shaft nearest the reed is No. 1, the next is No. 2, etc. If the warp repeat is composed of 30 or 40 ends across the warp, paste a slip of paper the width of the top of the harness shaft directly in the center of the shaft. Upon this paper, have the repeat typed, numbering the respective shafts so that if the weaver has three or more ends out he needs only to look at the repeat on the slip of paper to know through which dents to draw the ends. The ends, or the shafts through which they are drawn, should be grouped according to the ends that go into one dent of the reed.

For example, if the warp is drawn

Extra Hands···to Aid Industry—and You!

HANDLING COMPLEX PROBLEMS in the chemical process industries makes many a purchasing and production executive wish he had as many extra hands as this ancient Hindu idol to help him through—*and he has!*

THEY ARE HIS...and yours—in the cooperation and assistance of chemists, engineers, and technicians on General Chemical Company's Technical and Engineering Service staffs. These experts are well qualified by technical training and by practical industry-wide experience to offer sound, constructive advice in many ways—whether your problems deal with industrial, scientific or agricultural chemicals.

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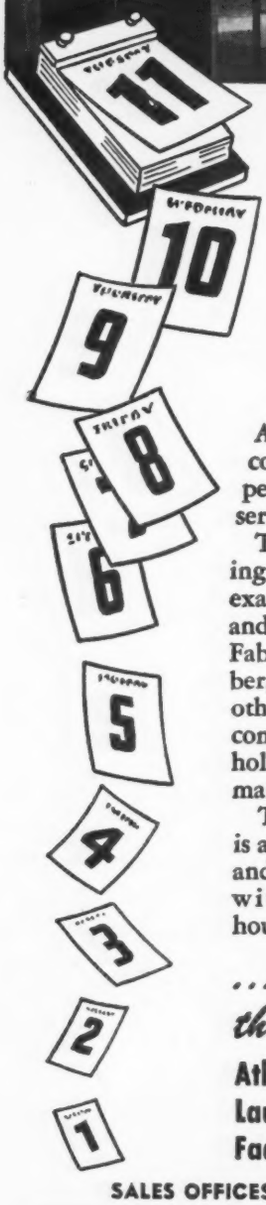

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A few days exposure in the Weather-Ometer with controlled cycles of light, water spray, selected temperature and humidity, equals years of outdoor service.

The Atlas Weather-Ometer brings these weathering conditions right into your laboratory where exact tests of materials can be duplicated at any time and reliable results obtained. Fabrics, finishes, paints, rubber, plastics, and hundreds of other products can be accommodated in suitable holders adapted to each material.

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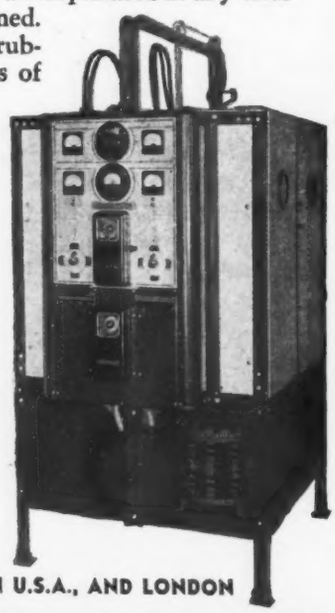

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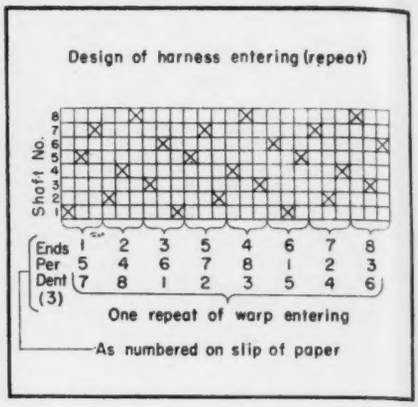


A slip of paper, showing the reeding design of the warp repeat, pasted on the top of the first harness will aid weavers in drawing in broken ends of a fancy-goods warp.

three ends per dent, the first three ends should be grouped together on the slip of paper, regardless of which shafts they are entered in. If the first dent contains one end each from shafts Nos. 1, 5, and 7, these shafts should be indicated for the first dent on the paper.

If all three of the ends in this dent break, the weaver can tell by a glance at the paper that she should draw one end each through harnesses 1, 5, and 7. *(R-298)*

Method of Grinding Cards Does Not Permit Uniformity

I was considerably interested in the card-grinding symposium which appeared in the June issue [page 116], particularly in the idea of attempting to standardize card-grinding speeds.

If a uniform grinding speed is desirable and attainable, its purpose will be defeated unless uniformity prevails in every condition that affects card grinding. The wire in the clothing must be of uniform quality; otherwise, uniform speeds of grinding will produce variable results. The abrasive with which the wire is ground must also be of uniform quality, and the settings of the grinders must be of uniform gage.

The quality of wire used in making clothing is a matter about which the average overseer of carding knows little or nothing. From this point of view, only the clothing manufacturer is in a position to know what the wire needs in the way of settings, speeds, and abrasives.

How often grinding should be done is a decision for the carding overseer and depends upon the quality of grinding and upon the quality requirements of the manufactured product. Certainly an overseer who runs osnaburg stock cannot use the same grinding

Lovely to look at . . .

Where—and how—the fabric in this lovely evening gown was processed is of little consequence to the lady who wears it. But this much you can be sure of: Unless the fabric had been properly processed, it would never have had the eye appeal that caught her fancy—the "buy" appeal that put it in her wardrobe.

That explains why so many of America's leading mills, converters, finishers and dyers have turned to Colgate-Palmolive-Peet for high-quality wetting, fulling, scouring and dispersing agents.

There is a C.P.P. soap or synthetic detergent for every type of fabric—for every processing problem. Ask your local Colgate-Palmolive-Peet representative for detailed information on the full line of C.P.P. processing agents made for the textile industry. Or, write to Industrial Department, Colgate-Palmolive-Peet Co.

•

COLGATE WHITE SOAP FLAKES

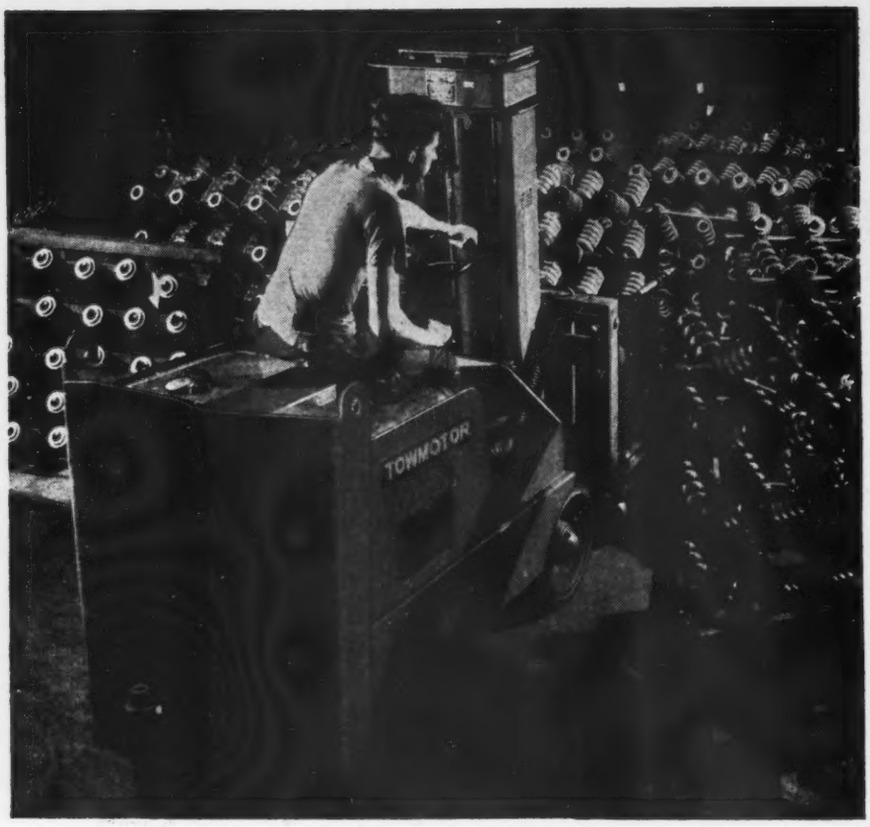
ARCTIC CRYSTAL FLAKES

ARCTIC SYNTEX "A" AND "T"

COLGATE FORMULA 10

Colgate-Palmolive-Peet Co.

JERSEY CITY 2, N. J. · ATLANTA 3, GA. · CHICAGO 11, ILL. · MILWAUKEE 4, WISC. · KANSAS CITY 3, KANS · BERKELEY 2, CALIF.



Geared—To Capacity Production

MILLIONS OF GEARS—gears of many sizes and shapes, for a large variety of uses—are produced by Warner Gear Division, Borg-Warner Corporation. Mass production of this sort entails numerous handling problems, many of which are effectively solved by a fleet of eleven Towmotors.

On receiving docks, a single Towmotor handles all types of raw materials including 18-foot bar stock, keeps materials flowing to production departments. In the shop, Towmotors tier 5600-lb. loads three high to triple storage space, provide a simple answer to the perplexing problem of transporting 1200-lb. cyanide pots from heat-treating to storage. One unit often does the work of a ten-man gang.

In the shipping department, two Towmotors load 250,000 lbs. of gears daily, in addition to supplying loads for three interplant trucks. And to Towmotor's record for versatility and capacity can be added economical operation . . . operating costs for each unit total only ¼ of the operator's wage.

For every handling problem, however unusual, there is an engineered solution . . . a solution based on Towmotor experience and "know-how" gained in solving handling problems in every industry. Send for your copy of the Towmotor Lift Truck ANALYSIS GUIDE today. Towmotor Corporation, 1217 East 152nd Street, Cleveland 10, Ohio.

TAKE IT UP WITH

TOWMOTOR

THE ONE-MAN-GANG

schedule and method used by an overseer who runs high-grade stock for broadcloth or fine-gage knitting.

In giving thought to the matter of keeping our carding wire in the best possible condition, we must keep in mind the fact that, with the exception of a relatively few attempts, we in the United States have never spun highest-quality fine yarns. In many European mills where fine spinning has been carried on for a great number of years, serious consideration has been given to the treatment of carding wire, especially to the treatment of the wire after it has been ground.

The device used for grinding flats is ingenious; yet, with the amount of vibration present in the average mill, the flat grinder is far from a quality-grinding mechanism and is seldom used in mills spinning highest-quality yarn. In these mills, the flats are taken from the card and ground on a top-flat grinding machine where the grinding of each flat is gaged to obtain as near perfection of grinding as is practicable.

After being ground, the flats are put back on the card and burnished. Burnishing is repeated at intervals to keep the wires smooth until the next overhauling period, when the flats are ground again.

At best, our method of grinding is crude, so far as quality of grinding and quality of product are concerned. The choice is not between good grinding and bad grinding, but between bad and worse grinding. It seems to me, therefore, that the variation in grinding speeds mentioned in the article is not of great importance unless equal attention is given to all the other conditions, including the manufactured product, which influence the quality of grinding. *(R-300)*

Common Identification Needed For Mill Lubricants

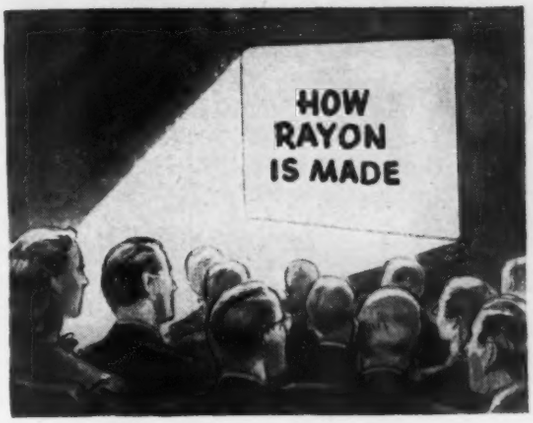
We are a little confused and have not fully appreciated the problems of the petroleum companies, machinery manufacturers, and textile mills as regards lubrication. Now we are reasonably familiar with the problems of each industry, and it is important that we stress the need for good lubrication practices.

In order for the three industries to communicate with understanding, we must have a common phraseology for the identification of lubricants. Whatever method is selected, it must be simple in its terminology, easy to remember, and bear some relation to the specifications of the oils and greases. It should be as simple and as stand-

RAYON REPORTS

Prepared Monthly by American Viscose Corporation, New York, N. Y. OCTOBER, 1946

"HOW RAYON IS MADE," NEW VISUAL PROGRAM, AVAILABLE FOR GROUP PRESENTATIONS



A unique educational program giving in semi-technical detail the key steps in the manufacture of rayon, from raw materials to finished products, has been prepared by American Viscose Corporation.

It is particularly planned for textile manufacturers and processors, as well as trade groups, but is not suitable for non-technical audiences. Arrangements to borrow it free of charge should be made through the American Viscose Corporation, 350 Fifth Ave., New York 1, N.Y.

Both the viscose and the acetate processes of making rayon are covered, as well as the steps in the production of rayon staple. The show is in four units:

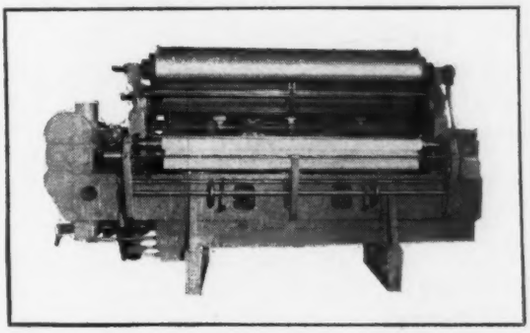
1. A 70-frame silent film strip (about 15 minutes) for detailed step-by-step study.

2. A 16-mm. sound motion picture showing the "flow" of the processes that are illustrated in the silent film strip.

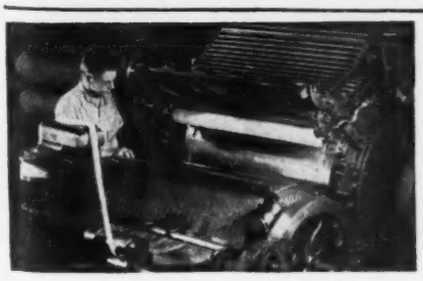
3. A reference leaflet containing all the pictures in the film strip and a complete accompanying commentary.

4. A users' guide giving a synopsis of the subject matter in the films and suggested method of presenting them.

NEW F.N.F. TRICOT MACHINE ON DISPLAY



The new F.N.F., high-speed tricot knitting machine is capable of knitting 1,000 courses a minute of a variety of fabrics. It will be displayed from October 10 to November 22 at the Textile Research Department of American Viscose Corporation, Marcus Hook, Pa., along with samples of its products. Knit-goods manufacturers and others planning to attend the exhibition are requested to write in advance for convenient appointments. Requests should be sent to American Viscose Corporation, F. N. F. Sales Agents, 350 Fifth Avenue, New York 1, N. Y.



Laps are being converted into untwisted strands of fibers which are here being drawn off as a sliver. The machine is one of an almost complete line of full-size textile machinery used for experiments at the Textile Research Department of American Viscose Corporation, Marcus Hook, Pa.

RAYON . . . 20 YEARS AGO

Rayon has "revolutionized the lining trade here and in England," a trade authority states, because of rayon's smooth texture and ability to give brilliant color effects.

Knute Rockne has ordered his Notre Dame football squad equipped with rayon "pants." He's confident that they (the pants) will survive the severest tests by tackle and slide.

A "Rayon Christmas" is predicted by New York City department stores, whose windows and counters are already decorated for Yule and brimming with rayon hosiery and underwear.

VISCOSE AD FEATURED IN "PLANT CITY ADVERTISING"

Featured on page one of the 1946 edition of "Plant City Advertising," published by the American Newspaper Publishers Association, is the American Viscose Corporation advertisement headlined: "Viscose payday is Marcus Hook's payday, too." The advertisement was selected as an outstanding example of newspaper advertising copy.

MAKE USE OF 4-PLY SERVICE

1 PRODUCT RESEARCH
Helps you get the right yarn or fiber.

2 FABRIC DEVELOPMENT
Helps you design new fabrics.

3 TEXTILE RESEARCH
Helps solve production and finishing problems.

4 "CROWN*" TESTED
Helps provide scientific selling facts.

AMERICAN VISCOSE CORPORATION

America's largest producer of rayon

Offices: 350 Fifth Avenue, New York 1, N.Y.; Charlotte, N. C.; Cleveland, Ohio; Philadelphia, Pa.; Providence, R. I.; Washington, D. C.; Wilmington, Del.

Plants at: Marcus Hook, Pa.; Roanoke, Va.; Lewistown, Pa.; Nitro, W. Va.; Parkersburg, W. Va.; Meadville, Pa.; Front Royal, Va.

*Reg. U. S. Pat. Off.

here's how the
CAMLOC
- one of the many features of
SILV-A-KING
INDUSTRIAL
Fluorescent Units
Speeds and simplifies maintenance. Eliminates the possibility of misplacing loose attachment parts.
RLM
Illustrated—
Specification" Unit
Just turn the Camloc
as you'd turn an ordinary
key in a lock . . . and instantly the
hood is removed for access to the entire operating
mechanism! The Camloc does away with cumbersome tools . . .
with the danger of scratching or denting reflecting surfaces.
Write for Bulletin 46FS
SILV-A-KING
Industrial fluorescent Units
BRIGHT LIGHT REFLECTOR CO., INC., Fairfield and State, Bridgeport 5, Conn.

ardized as the method of specifying automotibe motor oil as No. 20, No. 30, etc.

With such a common means of identification, the control of lubricants would be considerably simplified for both the machine manufacturers and the textile mills. The machine builders would be able to specify definitely the type of lubricant to be used on their equipment; and the mills would, in many cases, be able to eliminate some of the different oils now kept on hand. This practice would insure, for example, that prelubricated bearings would be renewed with the same type of lubricant as originally used.

Handling the problems of controlling lubricants in the mills would be greatly improved because this common terminology would be used in advertising, in discussions between mill men and representatives of machinery builders, and in the mills themselves.

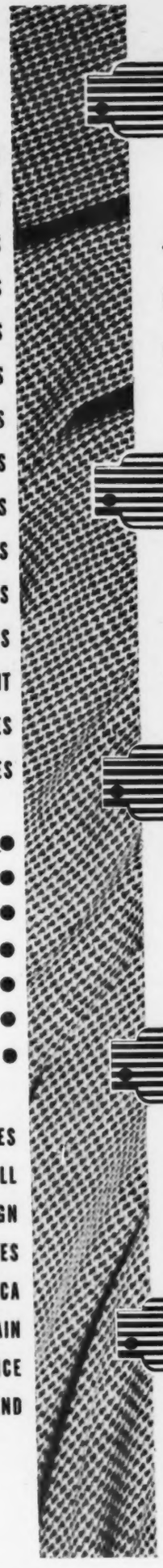
It probably would be best, from many angles, for the petroleum companies to undertake to set up the system to be used. They know their products, the uses of them, and the limitations of them. I should like to suggest that the petroleum companies make a study of this matter and recommend a common system of identification of oils and greases which would be acceptable to all of the petroleum companies. *(R-302)*

Waste in Cotton Depends on Grade

Of the factors of raw-cotton quality studied, grade has proved to be the most important by far with respect to percentage of picker waste, card waste, and total picker and card waste. The contribution of other fiber properties to these forms of waste is either substantially less or negligible. Fiber length appears to have little effect upon the percentages of waste in manufacturing.

These conclusions were drawn as a result of tests of 746 individual cottons and reported in "Relationships Between Properties of Cotton Fibers and Percentages of Wastes Associated With the Manufacture of Carded Yarns," by Robert W. Webb and Howard B. Richardson, U. S. Department of Agriculture.*

Grade of cotton, as the term is most widely understood, is not a separate fiber property but represents three factors: color, foreign matter, and ginning preparation. Grade discloses, by means of the variation in color, certain in-



COTTONS
RAYONS
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PLASTICS
WOOLENS
WORSTEDS
BUTTONS
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TEXTILES
FROM ALL
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1947

JUNE 2, 3, 4, 5, 6, & 7

GRAND CENTRAL PALACE

NEW YORK

AMERICA'S FIRST INTERNATIONAL EXPOSITION OF TEXTILES, TRIMMINGS, & FACTORY EQUIPMENT.

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Cutting-up & Retail Trades of the United States, Canada and Latin American Countries.

FULL DETAILS *NOW* AVAILABLE . . . BROCHURE AND FLOOR PLANS . . . ALSO NAMES OF THOSE WHO HAVE ALREADY CONTRACTED FOR BOOTH SPACE.

WRITE OR PHONE

INTERNATIONAL EXPOSITION FOR FASHION MANUFACTURERS

36 WEST 47th STREET, NEW YORK 19, N. Y.

WATKINS 9-8069

New... FASTER
FIRE STOPPING POWER
WITH

THE MASTER OF FLAME
ANSUL
REG. U.S. PAT. OFF.
FIRE EXTINGUISHING EQUIPMENT
duGas

DRY CHEMICAL
FIRE EXTINGUISHERS

Greatly increased fire-killing capacity.

Simplified operation.

Expert performance by inexperienced operators.

Quick, easier on-the-spot recharge after use.

More fire stopping power pound for pound, dollar for dollar.

Greater heat-shielding protection for operator.

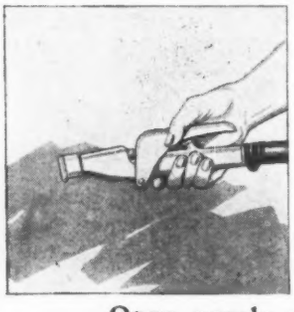
Increased fire-fighting capacity without increased weight.

Engineered to resist corrosion.

Install the NEW Ansul-Dugas Extinguishers at all hazard spots for greater protection against all fires involving flammable liquids, gases and electrical equipment.

Ready... in a Flash!

- Simply remove ringpin and push lever down.



- Open nozzle and direct chemical stream at base of flames.

53% More...
FIRE STOPPING POWER
with the NEW FASTER ACTING
ANSUL-DUGAS
FIRE EXTINGUISHERS

Write today for new catalog and authoritative data showing characteristics of all types of approved hand fire extinguishers.

Listed and Approved by Underwriters' Laboratories and Factory Mutual Laboratories.

ANSUL CHEMICAL COMPANY
FIRE EXTINGUISHER DIVISION • MARINETTE, WIS.

formation concerning the weathering or exposure in the field to which the fibers have been subjected between the time of boll opening and cotton harvesting. In some instances, grade also reveals information concerning attacks by insects, fungi, and the like, both before and after the boll has opened.

By means of variation in foreign matter, grade gives information concerning the method and efficiency of harvesting; and by variation in smoothness, information regarding storage, handling before ginning, and efficiency of ginning.

Although for individual samples the amount of waste removed in processing is not always higher for the lower grades of cotton, manufacturing tests have shown that the average percentage of manufacturing waste for the different grades to be approximately:

Good Middling.....	6.3%
Strict Middling.....	7.2%
Middling	8.0%
Strict Low Middling..	9.2%
Low Middling.....	11.8%
Strict Good Ordinary.	14.0%
Good Ordinary.....	16.5%

It should be understood, however, that the total picker and card waste for individual cottons of a given grade vary appreciably from any such averages.

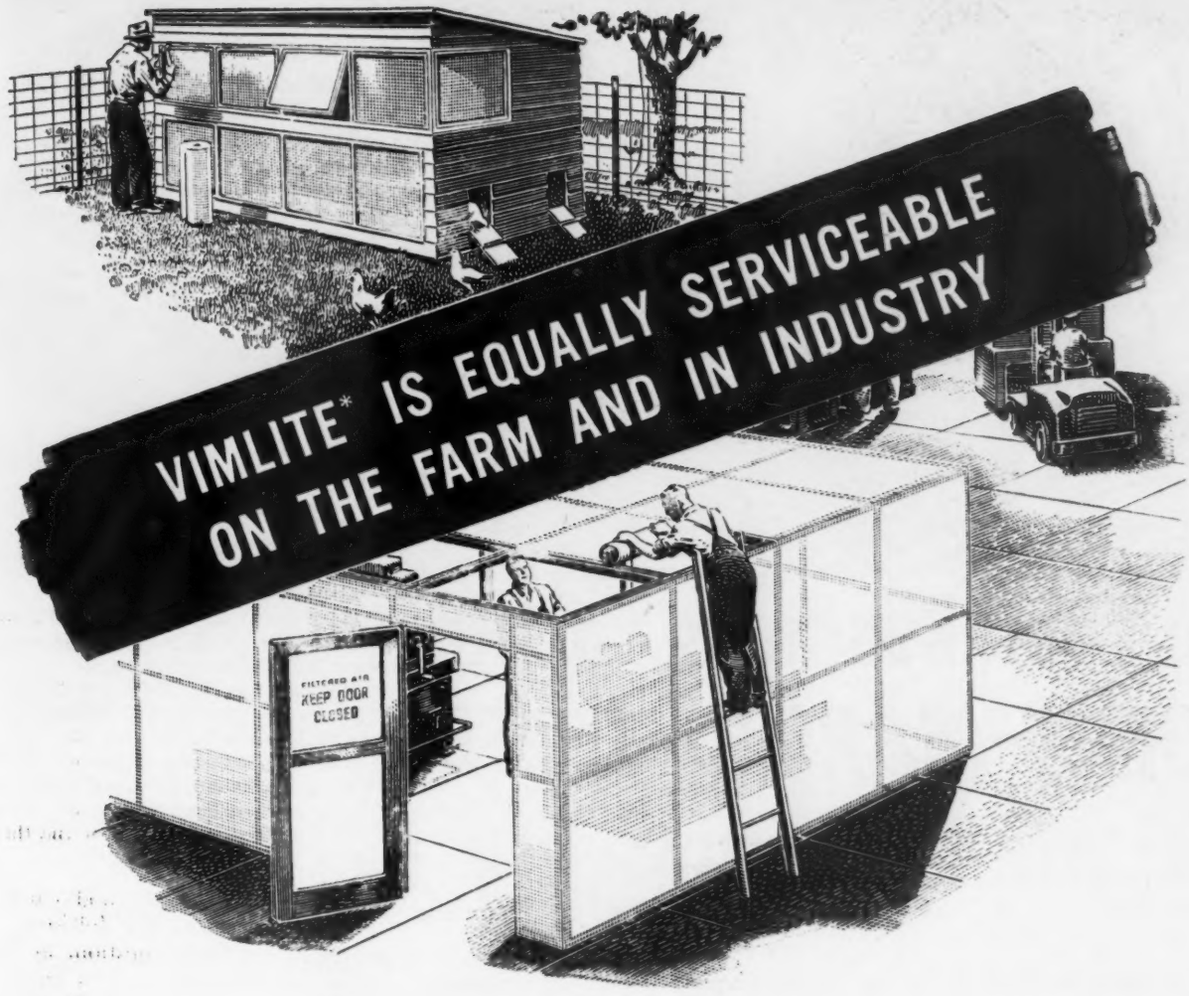
Color of raw cotton, as an element of grade, was studied in its relation to grade and to manufacturing waste. The three measurable attributes of color are hue (whether yellow, blue, or green), value (the degree of brightness or lightness), and chroma (the degree of intensity).

In all the cottons, hue was practically constant, thus contributing nothing signficant to grade. A relatively high degree of relationship existed between the grade and brightness of these cottons, and a comparatively low degree between grade and chroma. *(R-303)*

* The full report of these studies can be obtained by writing the U. S. Dept. of Agriculture, Washington 25, D. C.

"Conventional" Knot Used by Winder Operators

The article in the June issue on tying knots was quite interesting. In our winder room, we operate 45 Model 102 Foster winders; and we use only the weaver's knot. As a matter of fact, we do not admit that there is another knot, so far as our winder room is concerned. We tie it exactly as you described it in the article—the "conventional" method, of course. *(R-299)*



Vimlite is one of the most versatile of Celanese* products, with a great potential for expansion. It is a translucent material produced by coating either wire mesh or plastic mesh with a plastic film.

Vimlite is extensively used on farms. Millions of square feet are employed to glaze doors and windows of poultry houses and other farm buildings, for covers of cold frames and hot beds for plants. Vimlite transmits a high percentage of ultra-violet and infra-red rays, important to plant and animal growth. It is proof against weather.

In addition to the rural market, other important uses for Vimlite are rapidly being expanded. Vimlite is excellent for glazing storm doors, solaria and garage doors. In factories and offices there is a tremendous field for easily installed partitions incorporating Vimlite because of its transmission of light, soundproofing and shatterproof qualities. It adds little to floor load.

One of the latest and most interesting markets is for making window shades of attractive appearance and great serviceability, on an entirely new principle of light diffusion. Vimlite controls light and is very easy to keep clean. One of New York's famous Fifth Avenue department stores has installed plastic mesh Vimlite window shades which are proving of particular advantage in fitting rooms for obtaining both light and privacy. This same principle is being applied in similar installations for offices and institutional uses.

In still other fields, Vimlite is employed as a material for lamp shades, folding screens, and table mats. It is adaptable for multicolor printing which provides unusual attractiveness for countless articles such as wall coverings and displays.

Vimlite is an example of Celanese research in the three related fields of synthetics—textiles, plastics and chemicals—a continuous program with the goal of producing better products and new products to serve industry and the public. Celanese Corporation of America, 180 Madison Avenue, New York 16, N. Y.

*Reg. U. S. Pat. Off.

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Celanese*

TEXTILES...PLASTICS...CHEMICALS

Tie Your Business to the MONEY-MAKING SPEED of Air Express

NOW! THE LID IS OFF! MORE PLANES, MORE FLIGHTS — FOR EVERYBODY. PRIORITIES NO LONGER NEEDED!

How often has your business been slowed down in recent months because you didn't get something quick — maybe, because you didn't specify delivery by Air Express!

Since a day's delay in delivery can cost a lot of money, the great speed of Air Express is actually a money-making tool. It brings your farthest-away supplier within a matter of hours from your door — and at rates which have been drastically reduced — 22% since 1943. Put this service to work for your business!

Specify Air Express-a Good Business Buy

Shipments go everywhere at the speed of flight between principal U. S. towns and cities, with cost including special pick-up and delivery. Same-day delivery between many airport towns and cities. Fastest air-rail service to and from 23,000 off-airline communities in the United States. Service direct by air to and from scores of foreign countries in the world's best planes, giving the world's best service.

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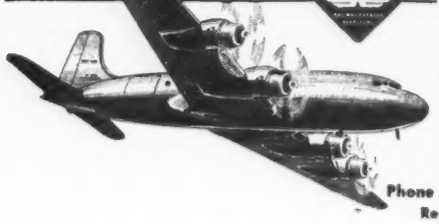
AIR MILES	2 lbs.	5 lbs.	25 lbs.	40 lbs.	Over 40 lbs. Cents per lb.
149	$1.00	$1.00	$1.00	$1.23	3.07c
349	1.02	1.18	2.30	3.68	9.21c
549	1.07	1.42	3.84	6.14	15.35c
1049	1.17	1.98	7.68	12.28	30.70c
2349	1.45	3.53	17.65	28.24	70.61c
Over 2350	1.47	3.68	18.42	29.47	73.68c
INTERNATIONAL RATES ALSO REDUCED					

AIR EXPRESS GETS THERE FIRST



Write Today for the Time and Rate Schedule on Air Express. It contains illuminating facts to help you solve many a shipping problem. Air Express Division, Railway Express Agency, 230 Park Avenue, New York 17, N.Y. Or ask for it at any Airline or Railway Express office.

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Representing the AIRLINES of the United States

Questions AND Answers

Preparation of Silk Depends on Type Used

Technical Editor:

We should like to receive all possible information on throwing silk preparatory to knitting women's stockings.

We wish to know: (1) how to prepare the silk in gum before twisting it, (2) which products for soaking silks are preferred and directions for their use, and (3) what is the train of throwing frames from the first winding up of the silk in gum until the spooling on cones of the thrown silk? (9107)

There are many methods used for preparing silk, and the following answers to the three questions specified briefly outline the method currently used by several successful silk mills.

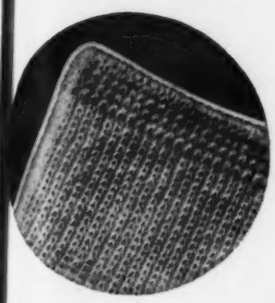
1. The books of silk are untied; and the skeins are pulled apart and partially shaken out, after which they are placed loosely in a dye net, 30 skeins to a net. These nets are then placed in tubs for soaking. The method used for placing the skeins consists of putting down one layer at a time and completely covering the yarn with the soaking solution, and continuing with other layers until the tub is full. (Never put more than 140 lb. in one tub.) The soaking solution is circulated through the silk for 4 hr. Then the pumps are stopped and the silk is allowed to stand in the soaking solution for 4 hr., after which it is extracted for 1 min. only.

2. As to the soaking solution to use for silk, there are several reputable companies which manufacture throwing oils and which would be glad to help work out a formula which is adaptable to the particular needs of the type of silk used. These soaking oils are mostly vegetable oils fortified with a small percentage of mineral oil. Alkalies must also be added to the soaking bath to form an emulsion and also to act as a hygroscopic agent. A good anti-mildew compound should be added to prevent mildewing.

3. After the silk is air dried in

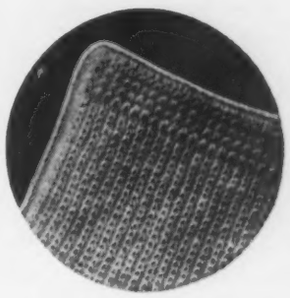
HEMPHILL COMPANY STATES ITS POSITION CONCERNING ROYALTIES ON *GENUINE* BANNER-LASTIC TOPS

(The Best Elastic Hosiery Tops)



HEMPHILL COMPANY SELLS ITS BANNER WRAP-REVERSE MACHINES AT A FLAT PRICE AND DOES NOT COLLECT ROYALTIES FROM ITS CUSTOMERS UNDER ITS OWN BANNER-LASTIC TOP PATENTS FOR MAKING THE FAMOUS BANNER-LASTIC TOP HOSIERY.

HEMPHILL COMPANY HAS BEEN ADVISED BY PATENT COUNSEL THAT NEITHER THE BANNER-LASTIC TOP NOR THE BANNER METHOD OR MACHINE FOR MAKING IT INFRINGES ANY VALID CLAIM OF ANY U. S. OR CANADIAN PATENT NOT OWNED BY THE HEMPHILL COMPANY.



Genuine Banner Equipment produces **BANNER-LASTIC HOSIERY TOPS** for full length, medium length and short length hose.

BANNER-LASTIC TOPS won't break because the elastic is laid in, won't slip because there is elastic in every course, won't roll down because the elastic is tuck stitched. **BANNER-LASTIC TOPS** always give maximum stretch because the elastic is measured. **BANNER-LASTIC TOPS** are always handsome because the ribbing is clearly defined. **BANNER-LASTIC TOPS** are produced completely automatically.

If you own a new Hemphill Banner Wrap-Reverse Hosiery Machine you are already enjoying the tremendous automatic advantage of producing **GENUINE BANNER-LASTIC TOPS.** If you do not own a Banner Wrap-Reverse Hosiery Machine place your order now.

Ask for the **BANNER-LASTIC TOP** and the Banner Wrap-Reverse Hosiery Machine booklets.

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BANNER-LASTIC TOPS

THE BEST ELASTIC TOP

Marco Polo Missed <u>This</u> Marvel!

During his fabulous trip to China in the 13th Century, explorer Marco Polo saw paper notes being used as money. He described them as made from mulberry trees and stamped in a printing press—and then dismissed their use as a "curious custom"!

Little did he guess he was overlooking one of the greatest advances in the field of finance; or that within a few centuries the whole world would be using paper notes as legal tender!

Today's businessman uses paper money as a matter of course. And he also makes use of another convenient financial tool — factoring. For he knows that in conducting his business through a factor he may be relieved of his financial worries, cut operating and overhead expenses and increase his volume, also he may solve that problem of reconversion or expansion.

Our officers are always ready and willing to help.

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CORPORATION

380 4th Ave., New York 10, N.Y.

MANUFACTURERS' BULLETINS

***READERS** may secure copies of literature reviewed on these pages by using the post cards below. Fill out **COMPLETELY** one coupon for each piece wanted.*

1. "Waste Ain't Waste" is the title of an 8-page folder published by VIT Films. It is composed entirely of pictures and captions taken from the educational slide film of the same name produced by the same company.

2. A coating comparison chart, giving characteristics and properties of plastic coatings and data on selection of proper coatings, preparation of surface, and application methods on steel, concrete, and wood has been published by Amercoat Division, American Pipe & Construction Co.

3. Turbo-blowers, rotary compressors, and vacuum pumps are explained in a 16-page booklet issued by Allis-Chalmers Mfg. Co. Included in the booklet are curves depicting pressure, volume, influence of water vapor on volume, and correction curves for volumes to maintain constant air weight with changes in temperature and barometric pressure.

4. Ion-exchanging water softeners for industrial use, both pressure and gravity types, which feature automatic equipment to control back-washing, brining, and rinsing processes, are described in a booklet published by The Permutit Co.

5. Sheerset and Lacet resin finishes, for application to sheet fabrics and Nottingham lace, are described and methods of application are explained in a bulletin published by Textile Resin Dept., American Cyanamid Co.

6. Switches and actuators for use in making machines automatic, for machine limit and control, and to control electrical current and/or temperatures are described and illustrated in Catalog No. 61 issued by Micro-Switch.

7. Type CG squirrel-cage motors, their construction, features, and some typical applications are described in Bulletin No. 720 issued by The Louis Allis Co.

8. Vibro-insulators for use as feet or bumpers on office and industrial equipment are described and illustrated in a booklet published by B. F. Goodrich Co. An outline on selection of proper insulators for specific requirements is given, and typical applications are cited.

9. Tachometer recorders and indicators, including potentiometer-type, millivoltmeter-type indicating, and strip-chart recording tachometers, are described in Bulletin No. S1400 issued by Bristol Co. Wiring diagrams, application data, and accessory information are given.

10. Lift-truck job studies, published by Towmotor Corp., illustrate and describe methods used by manufacturers to speed up materials-handling through use of lift trucks.

11. "Buying Guide of Allis-Chalmers Equipment for the Process Industries," issued by Allis-Chalmers Mfg. Co., is a 16-page booklet aimed to help in making proper selection of motors, controls, power generation and distribution equipment, vibrating screens, feeders, washing equipment, pumps, blowers, compressors, V-belt drives, and electronic-heating and welding equipment.

12. Portable pyrometers, having single or double scales and available with or without multiple rotary switches, are cataloged in Bulletin D602-4, published by Wheelco Instruments Co.

13. "Hidden Hazards on Your Roof", a folder published by Stonhard Co., discusses repair and waterproofing of roofs through use of Stonhard materials.

14. Continuous-indicating tachometers for industrial use, both portable and fixed types, are described and illustrated in Catalog 146 issued by Jones Motrola Corp. Specifications, mounting requirements, and speed ranges of 13 types of stationary tachometers and two types of maximum-speed recorders are given; two types of hand tachometers are cataloged.

15. Public relations for business and industry and summaries of some of the types of problems which must be solved are described in a booklet published by Institute of Public Relations, Inc.

16. "The Record of Rayon Cord in Tires" is the title of booklet published by American Viscose Corp. The booklet sets forth the characteristics of rayon and other cords and analyzes tire performance in non-technical terms, including such factors as mileage, impact resistance, and heat resistance.

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McGraw-Hill Publishing Co., Inc.

17. Stainless steel for dyeing and bleaching operations, including continuous processes, is described in a color-illustrated booklet issued by Republic Steel Corp. Sections of the booklet deal with choice of types of stainless steel for textile equipment and with the care of stainless-steel equipment.

18. Automatic materials-handling is the subject of a 24-page booklet published by The Louden Machinery Co. The Selectomatic dispatch system of automatic and unattended overhead materials handling, using motorized monorail carriers which travel alone from loading point to destination, is described and illustrated.

19. Micrometers, including outside models in 0 to 6-in. sizes, inside models, and depth models, are described in an 8-page folder issued by George Sherr Co. The folder also describes dial indicators and other machinists' specialties.

20. Fiber-bonded tapes, belts, roving, yarns, and rope are described, and their advantages are listed, in a 4-page pamphlet published by Cutler Textiles.

21. Cationic emulsifiers consisting of aliphatic amines and their acetate salts are discussed in a 6-page bulletin issued by Armour & Co. Characteristics, properties, and advantages are given.

22. "How to Fight Fires and Protect Property" is the subject of a 20-page booklet published by Randolph Laboratories, Inc. The booklet uses photographs and diagrams in the discussion of fire hazards, fire defense, placement of extinguishing equipment, and approved methods of operation of various types of extinguishers.

23. Industrial stationary tachometers, their uses, principle of operation, limitations, reliability, and performance, are described; and standard tachometer drives are illustrated in a 4-page folder issued by Boulin Instrument Corp.

24. Fluorine, its properties, and precautions for handling are described in Manual F-1 published by Pennsylvania Salt Mfg. Co.

25. Electronic heating and sealing with dielectric heat generators is discussed in an 8-page booklet published by Radio Receptor Co., Inc.

26. "Continuous Pigment Vat Dyeing" is the subject of a booklet published by Dan River Mills, Inc., in which the subject process is briefly described and the texts of the patent and the licensing agreement are reproduced.

27. Regeneration of zeolite water-softeners by use of the Lixate rock-salt dissolver is described in a pamphlet issued by International Salt Co., Inc.

28. Crease-proofing of synthetic, linen, and cotton fabrics by use of Aerotex Cream 450 and use of the material as a component of glazed-chintz finishes are discussed in a bulletin published by American Cyanamid Co.

29. Cord tension vibrator for measuring the fatigue resistance of mechanical fabrics by subjecting them simultaneously to vibration, heat, and tension is described and illustrated in a manual published by Ferry Machine Co.

30. Industrial lighting fixtures and accessories are cataloged, and installation data, including tables for determining foot-candle intensities produced under various conditions, are given in Bulletin 30-A, issued by Day-Brite Lighting, Inc.

31. Classified directory of consulting chemists and chemical engineers has been published by Association of Consulting Chemists & Chemical Engineers, Inc. The directory includes a key section which shows the firms specializing in particular types of work and follows with a one-page description of each member firm.

32. Protected-type motors for close coupling to centrifugal pumps, agitators, atomizers, and many machine tools are described in 2-page bulletin SL-300-8 issued by Crocker-Wheeler Electric Mfg. Co. Drawings and dimensions of NEMA *B* flange and NEMA *C* face mountings are shown in sizes up to and including 326.

33. Closed condensate-return system designed to increase heat-transfer rates in steam-process equipment through use of C-B system Jet-Loop high-pressure drain equipment is described and illustrated in Publication No. 2250 published by Cochrane Corp.

34. Model 40 controller, in indicating models and in single- and multi-pen recording models, is described in Bulletin 381 issued by Foxboro Co. The five types of control action available are explained.

35. "Rotating Electrical Equipment" is the title of 8-page Catalog No. 46-1 published by Electric Specialty Co. Illustrated and described are numerous types of motors, generators, motor-generator units, converters, and other rotating equipment reported to be typical of special equipment built.

36. Single horizontal compressors for air or gas, steam booster pumps, vacuum pumps, and staged compressors are described and illustrated in Bulletin L-640-B1A published by Worthington Pump & Machinery Corp.

37. "Know Your Woolfacts" is the title of an educational catalog on wool and wool products issued by American Wool Council.

TO GET MORE INFORMATION

1. Fill out completely *one space* (name, title, company, address, and item number) for *each* bulletin wanted. Put only one number in each square.

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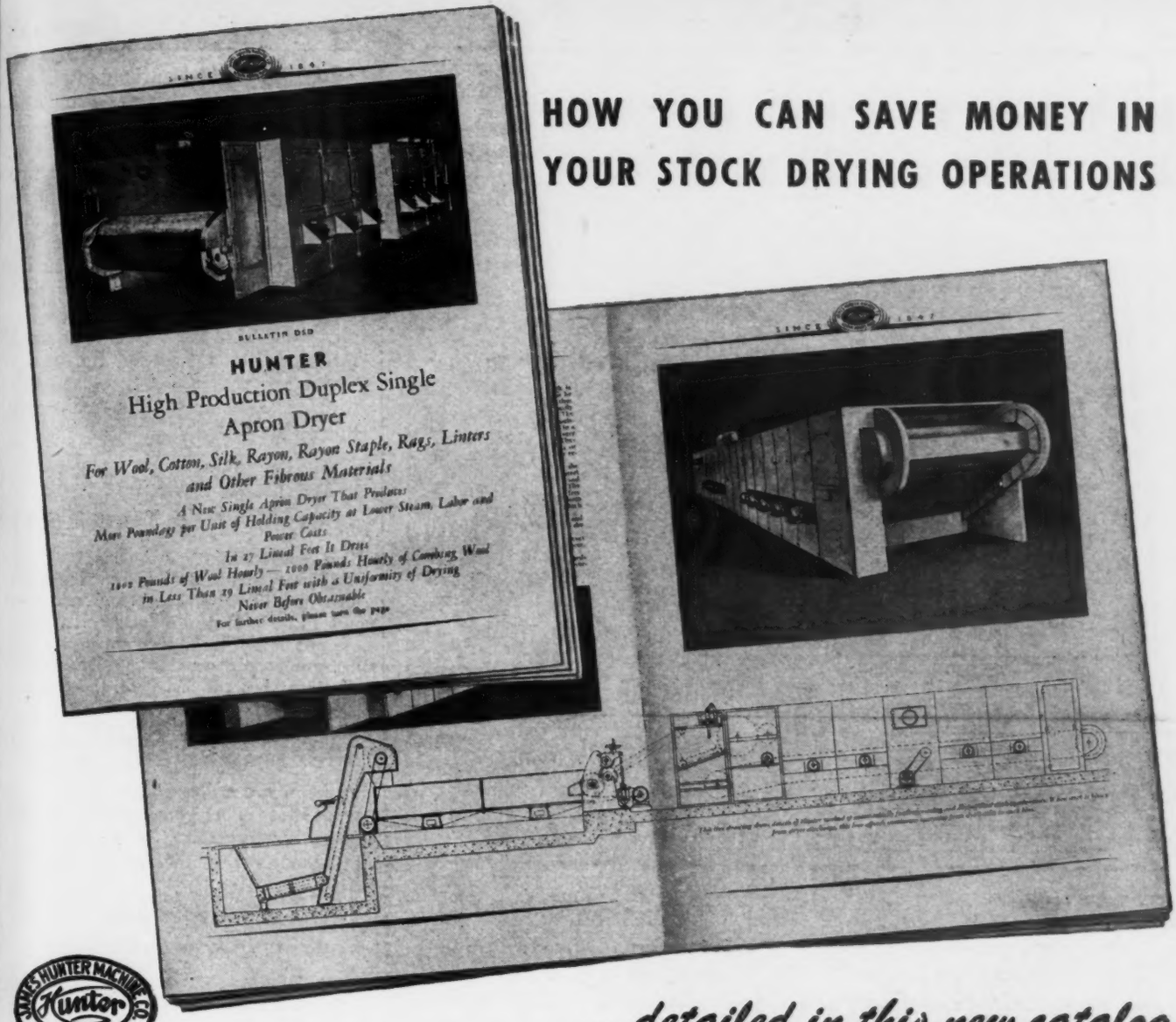
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BULLETIN D50
HUNTER
High Production Duplex Single
Apron Dryer
For Wool, Cotton, Silk, Rayon, Rayon Staple, Rags, Linters
and Other Fibrous Materials
A New Single Apron Dryer That Produces
More Poundage per Unit of Holding Capacity at Lower Steam, Labor and
Power Costs
In 27 Lineal Feet It Dries
1000 Pounds of Wool Hourly — 1000 Pounds Hourly of Combing Wool
in Less Than 19 Lineal Feet with a Uniformity of Drying
Never Before Obtainable
For further details, please turn the page
SINCE 1847

HOW YOU CAN SAVE MONEY IN YOUR STOCK DRYING OPERATIONS

...detailed in this new catalog

You are cordially invited to write for the new brochure illustrated on this page. It describes the new Hunter High Production Duplex Single Apron Dryer for wool, cotton, silk, rayon, rayon staple, rags, linters and other fibrous materials. The brochure will tell you how this new Dryer produces more poundage per unit of holding capacity at lower steam, labor and power costs. It describes how in 27 lineal feet it dries 1000 pounds of wool hourly—1000 pounds hourly of combing wool in less than 19 lineal feet with a uniformity of drying never before obtainable.

It describes in detail the newest aid to more uniform drying which is the Blow-up or Turnover Section incorporated into the Hunter Duplex Dryer.

It will tell you how you can continually rinse, extract and dry dyed stock so that the operation is continuous from the Dye Kettle to the stock bins.

Again we cordially invite you to write for this new free brochure.

JAMES HUNTER MACHINE CO.
NORTH ADAMS, MASSACHUSETTS, U. S. A.
FOUNDED 1847

THAT'S TH' BIGGEST STRAIN OF BEIN' TH' HEAD OF ANYTHING! TH' ONES WHO CAN'T GET ALONG WITHOUT YOU ARE TOO QUICK WITH TH' PULMOTOR, AN' TH' ONES THAT CAN'T GET ALONG WITH YOU ARE TOO QUICK WITH TH' STRETCHER!
YEH--BUT IT WAS A TERRIBLE SHOCK! THEY JUST TOLD HIM THAT WE'RE OUTA SOL-SPEEDI-DRI AND THEY FERGOT TO ORDER SOME!
A CRYING SHAME
J.R.WILLIAMS
T. M. REG. U. S. PAT. OFF. COPR. 1946 BY NEA SERVICE, INC.

Oil and grease deposits on textile mill floors are not only unsightly and dangerous, but they *can* wreak havoc in production by staining fine fabrics. Spread SOL-SPEEDI-DRI under spinning, weaving, picking and carding machines, or wherever oil may drip, and it goes to work immediately, soaking up oil and grease as a sponge soaks up water... making floors clean and safe.

No complicated machinery is needed to use SOL-SPEEDI-DRI. One man can do all the work necessary. No down-time on machines while cleaning goes on. SOL-SPEEDI-DRI *cleans*, while you work in safety. In addition, SOL-SPEEDI-DRI reduces the hazard of flash-fires, for it will not readily burn, even when oil-soaked.

SUPPLIERS: East—Safety & Maintenance Co., Inc., New York 1, N. Y.
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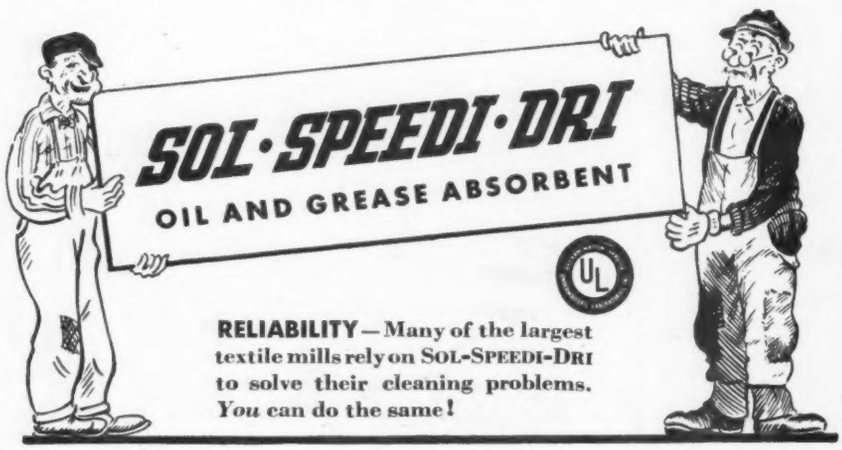

SOL·SPEEDI·DRI
OIL AND GREASE ABSORBENT
UL
RELIABILITY—Many of the largest textile mills rely on SOL-SPEEDI-DRI to solve their cleaning problems. *You* can do the same!

skeins, it is wound on bobbins. These bobbins are ready to make a multiple-thread yarn, either 2, 3, 4, or any other number of thread yarn desired. The doubling of this yarn is done on doubler-twister machines, and the yarn is given a preliminary twist of 3 to 5 turns. It is then ready for the final twist, which is done on a regular up-twister. The number of turns in each thread varies a great deal, depending on the purpose for which the yarn is intended. After twisting, the yarn is steam set and allowed to lag, after which it is ready for the final operation—cone winding.

How Much Twist Does Worsted Yarn Need?

Technical Editor:

What should be the number of turns per inch in a French-spun single 30s worsted yarn to be knitted into fine-gage half-hose, run one end? We wish to obtain as nearly maximum yarn strength as possible without affecting the soft hand of the finished product. (9136)

You did not specify the quality of wool from which the worsted yarn is to be made. For a '60s quality, 13 turns per inch (theoretical) should be satisfactory; for 64s quality, 12.5 t.p.i. should be sufficient.

Tufting Bedspreads Requires Little Labor

Technical Editor:

Will you please furnish me with the following information:

1. What machines and processes are involved in manufacturing chenille-tufted bedspreads?

2. What equipment is needed and what is the procedure for washing, dyeing, and finishing the spreads? (9137)

Wide sheeting is usually used as a base for chenille-tufted bedspreads, although it is possible to use narrow sheeting by sewing two pieces together to obtain the desired width. The sheeting is cut slightly longer than the desired finished length of the spread, since the length will shrink some; and after the sheet is hemmed on each end, it must be stamped for pattern.

To stamp the tufting pattern on the sheet, a finished spread is placed bottom side up on a large table; the sheet to be stamped is placed on top of the spread and smoothed out as well as possible; and the stamping block is run over the sheet. The raised stitches in the finished spread will cause the pattern impression to be made on the plain sheet.

The stamping block is only a block of wood with a mixture of paraffin

NOW

Perfect rubber cones wound throughout at uniform, very low tension

It's a simple matter to wind the *perfect* rubber cone . . . when you attach the Kidde Tension and Density Control to your Universal 50's!

This Kidde attachment—by pulling the yarn from the supply and *feeding* it to the cone—holds tension at extremely low limits . . . and keeps it *uniform* throughout the package. The stretch in rubber wound from skeins can be held *as low as 10%* on the cone. Winding speeds can be increased.

Kidde-wound cones allow knitting of uniform width goods . . . eliminate the tight strands in warps that cause gathering in the finished product. Increased power, too, in goods made from Kidde-wound material.

And Kidde-wound rubber does not deteriorate on the cone!

For further information on the Kidde Tension and Density Control, send for bulletin, "Precision Textile Winding." Consult Kidde for specific details on winding rubber.

Walter Kidde & Company, Inc.
1090 Main Street, Belleville 9, New Jersey

The word "Kidde" and the Kidde seal are trade-marks of Walter Kidde & Company, Inc.

Kidde

Walter Kidde & Company, Inc.
1091 Main Street
Belleville 9, New Jersey

Gentlemen:
Please send me your bulletin, "Precision Textile Winding."

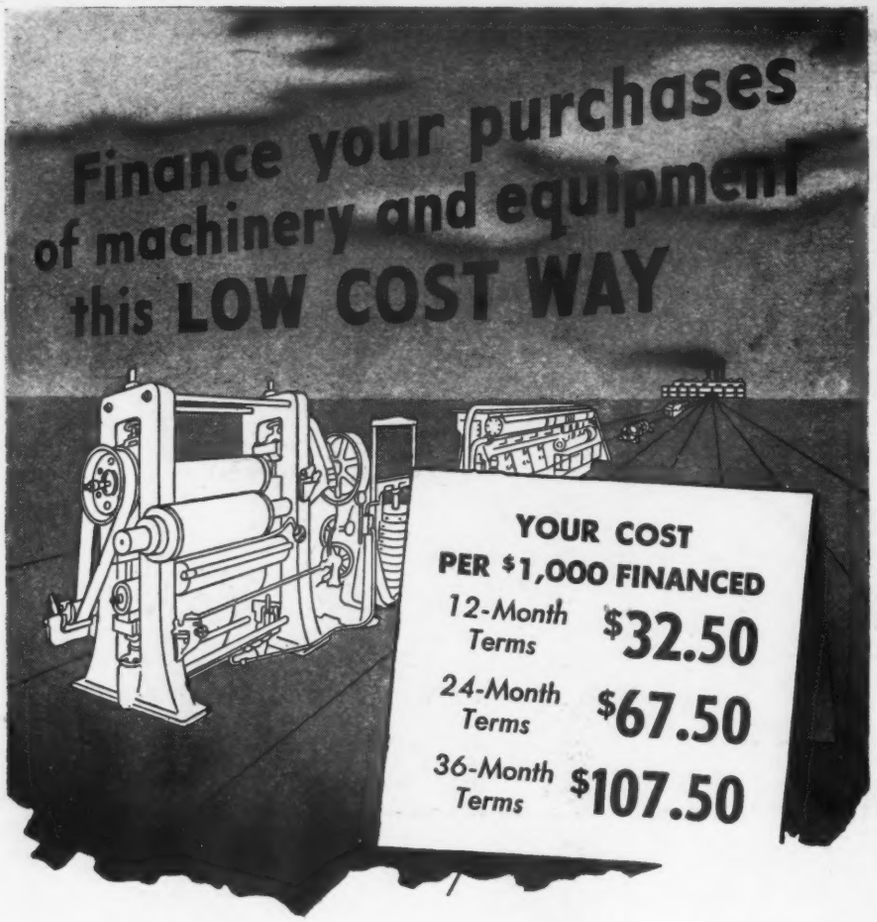
Name.....

Position.....

Company.....

Street Address.....

City and State.....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Don't put off buying the machinery and equipment you need to cut down costs and step up profits. Our Machinery and Equipment Purchase Plan is ready to provide financing at low cost . . . so you need not tie up funds that may be needed for working capital or other uses.

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wax and bluing adhering to the surface. The pattern it makes is a plain blue color which readily comes out during laundering.

After the sheet has been stamped, it is carried to the tufting machine, and heavy yarn is sewn along the pattern lines. The tufting machine cuts the yarn as each stitch is made.

At this point, the spread is ready for laundering or dyeing. Dip dyeing in hosiery vats is the method usually used. After being dyed, the spread is washed in a standard laundry washer, extracted either in the washer or in an extractor, and tumbled in the washer or in a tumbler. If the spread is not to be dyed, the laundering process is the same as after dyeing.

The tufting machine may be equipped with from 1 to 24 needles and operates at approximately 2,000 stitches per min.

Linen Harness Cords Should Be Varnished

Technical Editor:

A relative humidity of 60%, with a dry-bulb reading of 78°, is recommended for weaving viscose rayon. Our jacquard looms are equipped with harness cords made of linen and absorb so much moisture that we have trouble with them when we try to maintain 60% r.h. Can you advise some way to solve this problem? (9135)

Most jacquard harness cords are treated with varnish to make them moisture-proof. If your cords are not coated with varnish or some other moisture-proofing agent, you should try coating them at once.

However, if your cords have been treated and still absorb an excessive amount of moisture, you should check the moisture-proof coating for cracks, peels, friction rubs, etc. You should also make certain that your humidifiers are not set in such a position that they spray moisture directly over the jacquard heads. Settling spray not only makes the cords more likely to absorb excessive moisture, but it also will cause needles that are not kept well oiled to rust.

Specific-Gravity Test Not for Cotton-Viscose

Technical Editor:

We have cotton and viscose-rayon blended yarn on which we are endeavoring to make quantitative tests. In addition to the calcium-thiocyanate method (ASTM), we would like to separate the cotton and viscose rayon by their specific gravities, using carbon tetrachloride and toluol.

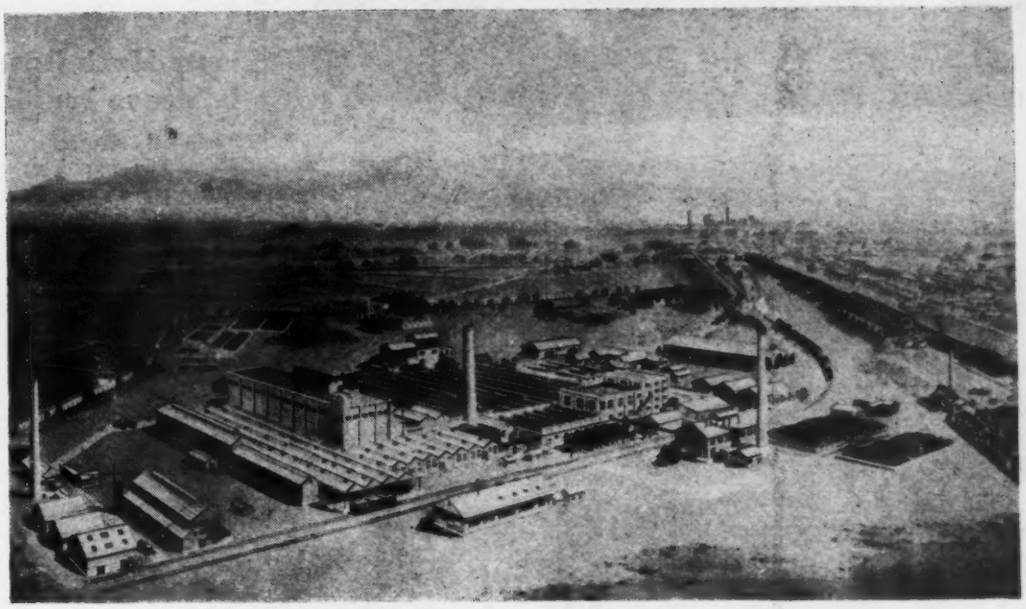
Will you please advise what specific

Rayon Plants by KOHORN

[No. 5 of a series of Kohorn Built Plants.]

This Plant Constructed in 1936

1919



1924

THE IMPORTANCE OF EXPERIENCE AND CONTROL

1935

Slightest variation in any one of a dozen operations in the manufacture of rayon and staple fiber may render the fiber inferior.

That's why Kohorn's experienced staff of chemical engineers (who have built 50 plants in 23 countries around the world) guarantee not only the most up-to-date plant but the finest quality yarn at minimum cost. Inquiries welcomed.

OSCAR KOHORN & CO., Ltd.

501 Fifth Avenue NEW YORK, N. Y.

1938

SERVICES RENDERED:

PLANT LOCATION:

(a) Survey on the ground to determine location, man-power, transportation, markets, raw material, power, fuel and water supplies.
(b) Determine size of initial plant, and plan its expansion.
(c) Consultation on types of yarn, denier, packaging, etc.
(d) Estimates for land and building, equipment, and working capital.
(e) Estimate production cost and overhead, sales and profit.

ERECTION OF BUILDINGS AND MACHINERY:

(a) Furnish complete plans for buildings and machinery.
(b) Supply all production machinery and auxiliary equipment.
(c) Send KOHORN engineers to erect plant, install machinery and building equipment.

STARTING PRODUCTION:

(a) KOHORN Chemists and Engineers, start the plant and bring it into full production.
(b) KOHORN experts help train local labor.
(c) Modern chemical and mechanical processes, installed by KOHORN hold consumption of raw material and labor to a minimum.
(d) KOHORN engineers co-operate with your sales department in introducing product to the market.

1945

PLANT EXPANSION

(a) KOHORN'S interest in your plant after it is turned over to you, continues. Consultation always available.
(b) Our latest patents are put at your disposal when plant expansion is contemplated.

LOWELL

SHUTTLES

DOGWOOD OR
PERSIMMON—
FIBRE COVERED
OR PLAIN

BOBBINS

MAPLE, BIRCH
OR BEECH

A HALF CENTURY OF EXPERIENCE

Experience is the best teacher and this company has had half a century of it in manufacturing shuttles and bobbins for all fibres.

All wood for Lowell Products is well seasoned and kiln dried. Every operation is performed in our own shop to control quality and speed up deliveries. Any desired finish can be furnished. May we hear from you?

LOWELL SHUTTLE COMPANY

Established in 1896

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gravity would best do this? Also, can you suggest any other chemicals that can be used to make a specific-gravity test? (9128)

Due to the fact that the specific gravities of cotton and viscose rayon are practically the same, it is hardly practical to try to separate the cotton fibers and rayon filaments by using carbon tetrachloride and toluol or other chemical mixtures.

How Much Does Combing Influence Length Variation?

Technical Editor:

Can you furnish us with data showing how much improvement in coefficient of length variation results from combing various amounts of waste from cotton? (9134)

Tests made a few years ago by government spinning laboratories on Delta cotton graded Strict Middling and classed as 1 5/32 in. yielded the

Sample	Comber waste	Length		
		25% point	Mean	Coefficient of variation
	(%)	(in.)	(in.)	(%)
Raw cotton	0	1.224	0.998	30.90
Comber lap	0	1.207	1.008	28.13
Comber sliver	0.57	1.216	1.022	27.06
	3.93	1.226	1.049	25.19
	7.77	1.238	1.059	24.53
	12.17	1.230	1.059	24.02
	13.96	1.272	1.084	23.61
	15.75	1.246	1.068	23.70
	18.35	1.263	1.087	22.58
	19.81	1.239	1.082	21.31
	24.20	1.233	1.086	20.89
Comber noils	0.57	.886	.596	59.82
	3.93	.928	.658	51.74
	7.77	.968	.674	50.69
	12.17	1.009	.722	46.29
	13.96	.984	.709	46.78
	15.75	1.009	.739	45.30
	18.35	1.030	.741	45.36
	19.81	1.012	.742	44.39
	24.20	1.027	.763	41.86

Fig. 1. Results of the comber tests as to the effect of combing upon length are shown here in chart form. The increase in mean length is more rapid than the increase in length at the 25% point because the fibers removed are consistently the shorter fibers.

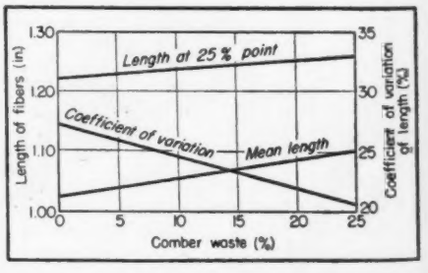

Fig. 2. The length of fibers in the comber sliver and in the noils steadily increase as the percentage of noils removed increases.

From this . . .

Fabrics with a future!

If ever the quality of water was important to the textile industry, it is now when so much is being done with chemical processing.

The impurities water contains could interfere with chemical reactions and affect the quality of finished fabrics. Permutit* removes these impurities.

Today many mills control the quality of their process water —and of their woolens, cottons, silks and rayons—with Permutit Water Conditioning Equipment.

Plan *now* for more efficient mill operations and finer fabrics. Write for the facts on controlled-quality water to The Permutit Co., Dept. TW10, 330 West 42nd St., New York 18, N. Y., or Permutit Co. of Canada, Ltd., Montreal.

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Better water makes BETTER FABRICS!

PERMUTIT

WATER CONDITIONING HEADQUARTERS

IN THESE DAYS A PLANT WON'T RISE FROM ASHES OVERNIGHT

BETTER CHECK YOUR FIRE EQUIPMENT NOW

Construction jobs are slower; building costs are higher. For your own safety and savings, make a fire protection survey in your plant—you may find your present protection dangerously inadequate or outmoded. If you have expanded your plant or added new processes, check your fire protection equipment carefully—the time to check is now—tomorrow may be too late.

Pyrene protects every risk. There's specific equipment for every hazard:

Pyrene Water-Type—contains plain water, discharged by pressure from gas cartridge. No chemicals, no annual recharging. Approved for fires in wood, paper, textiles, etc. in stores, offices, factories and schools. Also soda-acid type.

Pyrene Vaporizing Liquid puts out fire in electric equipment—transformers, rheostats, generators, engines and flammable liquids of all kinds. It smothers the blaze without injuring equipment or conducting current.

Pyrene Foam Playpipes are specifically designed to blanket large stores of oil, gasoline, naphtha, resins, solvents and other flammable liquids in a fire-blanketing layer of tiny bubbles.

If you are in doubt on your fire protection or require additional equipment, let a Pyrene jobber or one of our engineers help you. Write today for information.

Pyrene Manufacturing Company
NEWARK 8 NEW JERSEY
Affiliated with the C-O-Two Fire Equipment Co.

following results, as regards length, from combing cotton:

As the percentage of waste removed as noils increased from approximately 0.5% to approximately 24%, the length at the 25% point increased about 1/64 in. and the mean length increased about 1/16 in.

The coefficient of length variation, of course, decreased—from about 27% to approximately 21%. However, an analysis of the array showed that 39%, by weight, of the fibers were 15/16 in. or shorter and 41% were 1 1/16 in. or longer.

Warping Z-Twist Rayon Presents Sloughing Problem

Technical Editor:

The inclosed sample of yarn is 100-den. rayon, having 5 turns of Z twist per inch. We receive this yarn from our supplier on cones and use it to make warps for milanese and tricot warp-knitting machines from a Reiner jack creel with sheepskin pads on the backs of the cone spindles (not a magazine creel).

During the warping process, several layers of the yarn loop off the cones and drop down behind the cones, causing breaks in the yarn. We have tried different degrees of humidity and temperature and also different amounts of tension on the yarn, but these measures have not eliminated our trouble. We can reduce the sloughing of the yarn by slowing down the warper; but this step, of course, increases our warping cost.

We have found that looping is not so bad when we use the same kind of yarn twisted with S twist.

Can you recommend any steps we could take to improve the warping of our Z-twist yarn? (9133)

Yarn looping off cones is a common problem with Z-twist yarn which has been coned in the usual direction. There are some things you can do to help the condition, but it is doubtful that you will be able to run Z-twist yarn as satisfactorily as S-twist.

Experience has shown that for some reason Z-twist yarn runs better on magazine creels than on the older types of creels; but, of course, a lot depends on the particular design of the creel you are using. Naturally, the position of the jack pins and the relationship of the cone to the tension device influence trouble you might encounter or avoid.

One thing you can do is to lay light strips of cloth about 2-in. wide on the tops of the cones. Finished knitted tricot fabric would be quite satisfactory. Another thing that might help is to allow the cones to sit unwrapped in your warping department a few days before putting them on the warper.

Scott Tester Data Sheets are yours for the asking. Request Complete Set for your Maintenance Man's information and guidance.

MAINTENANCE DATA SHEET NO. 6

RECORDER

For providing elongation measurements, the autographic recorder is the most convenient, accurate method. To insure accuracy, observe the following.

Pen slides MUST be kept free of dirt, rust or foreign matter that would add undue friction. All moving parts between the weighing head and the pen or sparking point must be clean. On pendulum type testers, wipe the slide bar with an oily cloth at least once daily. Avoid using more than a small drop of oil at any one point of contact in the pen mechanism.

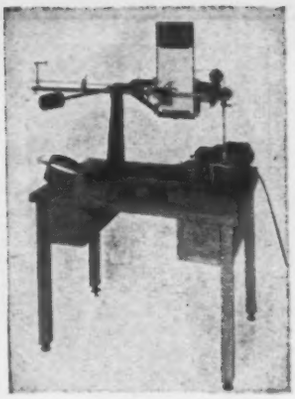
All parts of the recorder which drive the platen, and the pulleys or slide guiding the platen, must move freely; use a few drops of light machine oil.

To verify elongation record obtained from the recorder: Return the clamps to normal starting position. Place a chart in the holder so that the pen indicates zero load and zero elongation. Measure the distance between the butts of the clamps (or some other bench mark) to the nearest 0.01", calling it Cn (normal clamp distance).

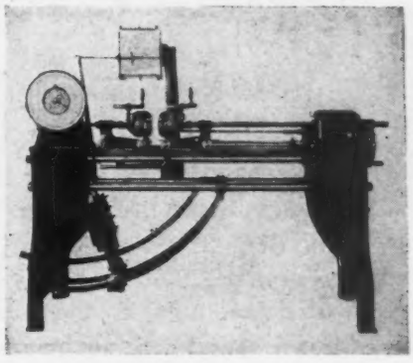
Test the location of the chart in the holder by operating the machine without any sample. The pen line should coincide with the chart axis showing zero load and variable elongation. If necessary, re-position chart to obtain this coincidence. Then, without any sample in the clamps, operate the tester to 1.0" elongation on the chart. Measure the distance between the bench marks, which should equal Cn plus the elongation on the chart. Repeat this at 2.0" and 3.0" on the chart. Any discrepancy between the recorded elongation and the actual increase in distance between the clamps is a recording error due to faulty chart spacing.

IP-2 Incline-Plane *SCOTT TESTER

*Registered Trademark



The exclusive "Incline-plane" Scott Tester is expressly designed for testing rayon or nylon yarn, or rubber thread for tensile and hysteresis. Equipped for various capacities from 0 to 2,000 grams, it performs the desired tests automatically, producing a literal stress-strain chart of utmost convenience for ready reading and reference filing.



MODEL Q

Model Q, 2,000 lbs. capacity, is adapted to testing duck, twine, cords, etc., as well as for wire testing. Machine is of exceptionally heavy construction with large factor of safety and will stand up for years under steady production testing.

NEW CATALOG No. 45
AND TESTING HANDBOOK
JUST PUBLISHED
Request Your Copy

Contains full description of numerous standard physical testing methods and machines – plus a wealth of related reference data.

SCOTT TESTERS, INC.

95 BLACKSTONE ST., PROVIDENCE, R. I.

Scott Testers — Standard of the World

Pedigreed Colors

FOR YOUR YARNS

Globe keeps records, as exact and documented as those kept by a breeder of fine horses or prize winning dogs.

The birth of a new color is accompanied by statistics of yarns, dyestuffs, and processes that make it easy for us to match the shade precisely, a day or a year later.

Thousands of Globe customers count on these records, just as men count on recognized breeders for purity of strain and persistence of characteristics in the pure bred animals they buy.

Yet there is no price premium for this service to the exacting mills that come regularly to Globe for yarn dyeing.

1865 1946

Globe DYE WORKS CO.

We do Package Dyeing on tubes, skein and warp dyeing, warp mercerizing.

Yarns we process include cotton, rayon, acetate worsted, spun rayon, nylon, Aralac, blended and novelty yarns.

FRANKFORD PHILADELPHIA 24, PA.

Rayon Finishing

(*Continued from page 123*)

the No. 3 Wash Test. Because fastness to light is an important consideration, the laboratory must select dyes which will pass these wash-fastness tests and, at the same time, have outstanding light fastness. Here, the proper selection of colors to produce a given shade becomes extremely important.

The laboratory must select dyes which not only are fast to light as self shades but are also equally fast in the dye combinations necessary for the required shade. Vat colors are often used for the production of light shades and these colors, too, must be carefully selected.

Atmospheric shading of acetate blues and violets is a problem requiring much attention by the laboratory. One solution is to use inhibitors in the final treatment of acetate fabrics in order to neutralize gases which might act upon the dyes. It is the duty of the laboratory to recommend the best acetate colors and the best inhibitors for the particular problem at hand. Fabrics composed of viscose and acetate which are either to be cross-dyed or to be dyed leaving the acetate white, sometimes present a problem. Here the laboratory determines which dyes leave the acetate the cleanest and, also, which are the safest. Advance determinations save much operating time and avoid possible rehandling.

A very important function of the laboratory is the careful supervision of all dye-house formulas and processes, as well as the standardization of preparation and finishing operations. Such control makes for uniformity of shade and finish in a given lot and for consistency of results from lot to lot.

FINISHING. Since practically all synthetic fabrics are finished with water repellents, or cation-active softeners, or resins, etc., and since some of these act adversely upon either the shade or the fastness of many dyestuffs, the laboratory must take the finishing materials and processing into consideration when setting up a dye combination. Further tests must be made on such finishing materials to check their durability and the type of finish imparted to the fabric. The proper material or combinations to produce the finished hand, fabric stabilization, or crease-proofing desired by the customer are then selected. Examination of finished goods for uniformity and quality of finish is a part of the laboratory's job.

LABORATORY EQUIPMENT. The Capitol laboratory, part of which is shown

CEGLIN* *Finish for Textiles*

FOR GREATER ABRASION RESISTANCE

CEGLIN is a lasting cellulose finish that increases fabric strength and durability . . . stabilizes shrinkage and stretching . . . increases resistance to slippage, distortion and abrasion. CEGLIN can be applied before boil off . . . during mercerization . . . before or after dyeing . . . or as a final finish. It does not require curing nor ageing at high temperatures.

How CEGLIN *Increases the Intrinsic Value of Fabrics*

PROVIDES A FINISH OF DISTINGUISHED CHARACTER.

Stands up under laundering.

Adds tensile strength.

Stabilizes shrinkage and stretching.

Increases resistance to slippage or distortion.

Makes possible a wide range from softness to crispness.

IMPROVES RESISTANCE TO ABRASION.

Helpful in solving manufacturing problems.

For additional information write for technical booklet giving complete directions on uses and application of Ceglin.

Made only by SYLVANIA DIVISION
AMERICAN VISCOSE CORPORATION
Manufacturers of cellophane and other cellulose products since 1929
General Sales Office: 122 E. 42nd Street, New York 17, N.Y. *Plant:* Fredericksburg, Va.

SYLVANIA** TEXTILE FINISHES

** Reg. U.S. Pat. Off.

ARMSTRONG
industrial type
HUMIDIFIERS

Made by the Makers of Armstrong Steam Traps

What RELATIVE HUMIDITY *do you need?*

DO YOU KNOW the numerous benefits that can be secured by maintaining proper relative humidity in processing plants during the winter heating season? "Prevention of loss of weight and deterioration of quality of hygroscopic materials" . . . "Control of dust and static electricity" . . . "Improvement of workability of materials" are just a few of the improvements cited. Ask for a copy of bulletin telling "What every production executive should know about humidification."

Armstrong builds a complete line of steam type humidifiers. Unit capable of handling as much as 40,000 cu. ft. of space lists for as little as $100.00, complete with humidistat, solenoid control valve, fan, steam strainer, and drainage trap.

TYPICAL RECOMMENDATIONS

Cotton Carding	50%
Cotton Spinning	60-70%
Cotton Weaving	70-80%
Rayon Spinning	85%
Rayon Twisting	65%
Silk Processing	60-70%
Wool Carding	65-70%
Wool Spinning	55-60%
Wool Weaving	50-55%
Paper Box Storage	45-60%
Printing	45-60%

**Data on recommended temperatures on request.*

ask for this bulletin

Now is the time to find out about the beneficial effects obtained by maintaining proper relative humidity during the winter heating season. Ask for a copy of Bulletin No. 158.

ARMSTRONG MACHINE WORKS
872 MAPLE STREET • THREE RIVERS, MICH.

in the illustration, is equipped for the tasks described. It possesses a lato type Chain-o-meter balance with magnetic dampener; several water baths, electrical hot plates, etc., for testing dyes; and auxiliary laboratory equipment for analytical work. Also, this laboratory has special testing equipment necessary for evaluating water repellents and fabric stabilization, as well as T.B.L. machines for measuring crease resistance and resistance to wear. Supplementing this physical equipment, the laboratory has complete files on each shade of all the various styles of fabrics processed. The data on each shade card shows not only the dye formula, but also the cost per yard. From the laboratory tests continually run, the dyehouse acquires detailed information to enable production of each shade as economically as possible while giving the customer the fastness he desires.

Aptitude Tests

(*Continued from page 137*)

job quickly and efficiently will be satisfactory to his foreman and satisfactory to himself. What we look for is the right mental ability for the job. It is just as poor placement work to put a highly imaginative and mentally alert person on a routine, unskilled task as it is to put a slow thinking person of low mentality in charge of complicated machinery.

The third and final objective is to find workers who will be safe workers. Here we need tests which will reveal physical defects, poor coordination, and, if possible, those mental "quirks" which seem to make some people more accident-prone than others.

Having decided on objectives, you can now proceed to set up a program. To get the best results and the most information, do not restrict your thinking—and, later on, your correlations—to the use of form-boards, tweezer tests, peg-boards, and so on. The physical examination given by the plant doctor is a test—and a very valuable and revealing one. The report of a trained employment interviewer should be included in your study of test results, and the combination of all these methods used in final placement work.

Aptitude and mental ability tests are not automatic selectors of workers. Used in conjunction with, and supplementary to, the personal interview and the evaluation of past experience, they can be valuable aids and tools in selection, placement, and promotion procedures.

TYPES OF TESTS. The most common

BOGER & CRAWFORD

Mercerized Yarns

MAIN OFFICE & FACTORY
J & EAST VENANGO STS
PHILADELPHIA

CABLE ADDRESS
BOCRA

IT is with pleasure that we announce the appointment of Mr. Harry J. Riebe as our Western representative in the states of Illinois, Indiana, Michigan, Minnesota, Missouri, Ohio and Wisconsin, to take effect Tuesday, October 1, 1946, with headquarters at the Marion Building, Cleveland, Ohio.

Mr. Riebe will make an effort to call on you just as soon as possible, and it is hoped that his calls will be helpful to you.

Any courtesies that you may extend to him will be greatly appreciated.

Very truly yours,

Fredericka Boger

President.

By Invitation Member

Emblem of Business Character
RICE LEADERS OF THE WORLD ASSOCIATION
Represents High Standing in Name Product Policy

...for better valve service!

For production economy and efficiency, you must, of course, have good valves to begin with. That's why maintenance men prefer Lunkenheimer longer-life Valves . . . correctly engineered, quality built, dependable.

Yet in themselves even the best valves are not enough. A convenient source of supply and dependable service are equally important.

Lunkenheimer Distributors, located in principal industrial centers, render a *complete* valve service that saves time, trouble and money. Trained, qualified representatives are at your call to help with your valve problems.

For better, experienced valve service, call your nearest Lunkenheimer Distributor.

Fig. 1430
Iron Body Gate

Fig. 2125
Bronze Gate

THE LUNKENHEIMER CO.
Cincinnati 14, Ohio, U. S. A.
NEW YORK 13, CHICAGO 6, BOSTON 10, PHILADELPHIA 7
EXPORT DEPT., 318-322 HUDSON ST., NEW YORK 13

types of tests, and the ones most frequently used, are intelligence, mechanical aptitude, and manual dexterity tests. For many industries and jobs, these work out very well. For the machine tool plants, assembly plants, and industries with a continuous, repetitive cycle of operations, efficient tests can be quickly discovered and good results obtained.

A good testing program leans heavily on job analysis. Job analysis will indicate what abilities, what training, what interests, and what mental and physical effort each job requires. The theory that applicants making the highest scores in some intelligence and manual dexterity tests are the best workers is fallacious. The worker with high intelligence hired for a routine job requiring more brawn than brain will soon become discontented, restless, and indulge in day-dreaming. Similarly, the applicant with high finger dexterity will be much happier as an assembler in an electrical fixture plant, for example, than he will be in any bleaching operation.

Another important thing to remember is that the tests should not require action out of the usual. For example, most intelligence tests and many mechanical aptitude tests are written. The applicant must read instructions, read the questions, read the alternative answers and use a pencil to underline, circle, or otherwise indicate his answer. In some, he must trace or complete geometrical figures, place dots in circles or perform similar tasks. You will encounter many applicants who have done little, if any, reading or writing since leaving school. To sit at a desk with a printed "examination paper" and a pencil will throw them completely off balance and their scores will be low. Yet they may still have good native intelligence or be quite handy in mechanical operations.

We are at present experimenting with two types of non-verbal mental ability tests. One is entirely manual and the other is conversational. No reading or writing is required in either case.

Written tests are used for clerical workers and also, in addition to the non-verbal tests, for prospective industrial workers whose backgrounds appear to justify their use or who are prospects for jobs requiring the keeping of records.

When it comes to testing aptitudes or skills of value in the finishing industry, considerable research is required. While there are many types of pegboard, tweezer, and other figure- or manual-dexterity tests, these dexterities do not commonly appear in bleaching or finishing operations. You may find it necessary to devise some tests of

WHEN

- 25% to 50% LOWER SINGEING COSTS WOULD PLEASE YOUR POCKETBOOK
- YOU'D LIKE TO INCREASE SINGEING SPEED FROM 2 TO 30 TIMES
- THE SAME LINE MUST HANDLE VARIOUS WEIGHTS AND FABRICS

THEN

modernize with KEMP "Radiant-Flame-Compression" Singeing

There's clear proof for all three statements.

First, actual reports from users, based on before-and-after fuel bills, reveal that operating costs can be cut in half. The explanation is in the KEMP process. It begins by completely and automatically carbureting the fuel *under pressure* before it reaches the burners, and ends by completely singeing both sides of the cloth *in one pass.*

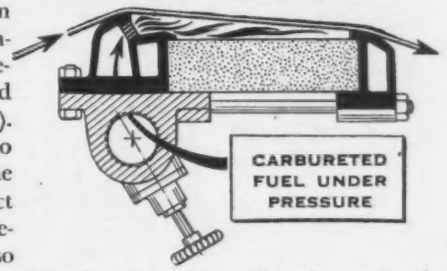
Second, numerous on-the-spot time checks have shown singeing speeds in excess of 400 yards per minute. Chief limiting factor in one large New England mill was the inability of the burner frames to stand up under the vibration and stresses of faster cloth travel!

Third and last, KEMP "radiant-flame-compression" was developed specifically for speed and versatility (see description below). In mills both here and abroad it is handling textiles as diverse as nylons, felts, sheetings and mohair — at speeds up to 30 times faster than ever before.

The coupon below is a good first step in bringing your mills closer to fast, low-cost singeing practice.

SPEED IN CROSS-SECTION

Illustrated here is a KEMP "radiant-flame-compression" burner, the fastest singeing unit on the market today. The taut fabric, represented by the double arrowed line, races across the water-cooled burner lips, squeezing strong flames between cloth and an incandescent refractory bed (mottled area). Action is so rapid, and the sweeping effect of the positive-pressure flame so strong, that complete singeing without burning or beading takes place in a single pass.



Two of these units arranged in tandem and on opposite sides of the cloth will uniformly singe both sides simultaneously at rates approaching 30 fabric miles per hour.

KEMP OF BALTIMORE

PRECISION CARBURETION ✚ ADAPTED COMBUSTION FOR INDUSTRY'S HEAT USING PROCESSES
ATMOSPHERE GENERATION & ADSORPTIVE DRYER SYSTEMS FOR PROCESS CONTROL AND PROTECTION

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Send me your literature, and the names of major mills which use your system..... ☐
Send a field engineer to see us..... ☐

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Position_____

Company_____

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When we're recommending equipment to handle air, or gas, we're completely unbiased as to Centrifugal or Rotary Positive machines. That's because of our *dual-ability* to select, design and build whichever type of unit best meets your needs.

This *dual-ability* is at your service, for a 10 CFM or a 50,000 CFM (or higher) installation. You can rely upon our recommendations and the performance of our equipment, because there's almost a century of successful air-handling experience behind them. Call on us, without obligation.

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One of the Dresser Industries
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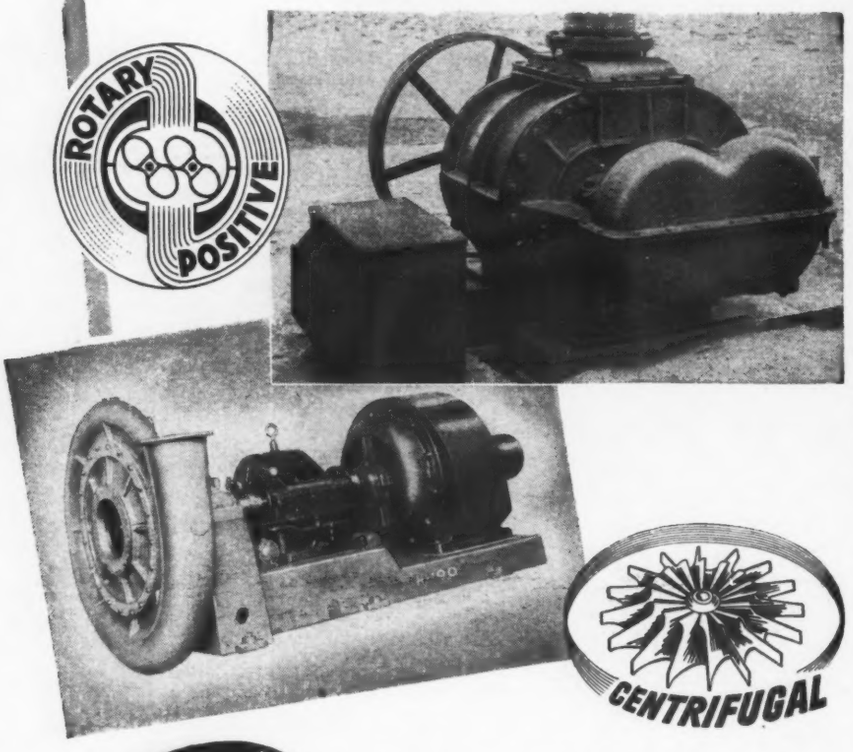


Roots CONNERSVILLE SINCE 1854

BLOWERS FOR EVERY NEED

ROTARY POSITIVE AND CENTRIFUGAL BLOWERS • EXHAUSTERS • BOOSTERS
LIQUID AND VACUUM PUMPS • METERS • INERT GAS GENERATORS

your own, "custom-built" to fit the jobs.

Form boards are available which measure spatial relations. This is an attribute which is important to most workers in the finishing industry. Most of these tests are really tests of speed in recognizing certain forms and space relations. If nothing more, they are useful in discovering those persons who have a sort of "blind spot" in recognizing space and depth. Employees who have a poor third dimensional sense are likely to be a real hazard. This defect, along with poor vision, probably accounts for most accidents caused by moving machinery.

Tests for vision should be included in every program. Visual acuity and astigmatism may be measured by the plant physician; but if this is not done, such tests should be given in the personnel department before hiring. They are quite easily administered and require little equipment and space.

In the finishing industry, color perception is quite important. The degree of color discrimination required varies with the job, and it is not necessary to test every employee for the highest color discrimination. The most accurate color tests, which measure very accurately the ability to discriminate among the closest shades of the same color, take around 45 min., too long a time for any but professional colorists and other important jobs.

TEST EVALUATION. One of the most important parts of a testing program is the demonstration of the reliability and validity of the tests to be used. It is frequently assumed that a testing program is an end in itself; and that once tests have been given and scores obtained, that is all there is to it. Actually, the interpretation of the test scores is the most important feature. Thus, one of the first things to do after a number of test scores have been obtained is to discover their relationship to the various capabilities required. You may have various criteria derived from production records, foreman's ratings, accident records, and personality traits. Measuring the results of a test against such records is to determine its validity or its percentage of accuracy in measuring what it is supposed to measure.

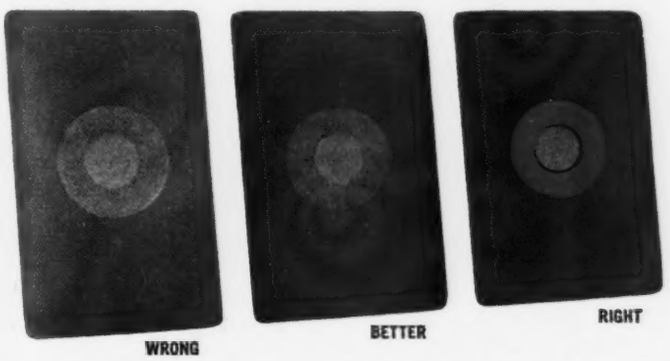
The next step is to discover the test's reliability, or how consistent it is, in measuring the same employee. Thus, a test which gives quite different scores to the same group of employees on repeated testing has low reliability and will be of little service. On the other hand, you may find tests which have high reliability but low validity. To take a simple example, a test which measures height and weight will, of

Right: Much of our wild life is beautifully camouflaged by Nature. The right protective coloring helps small birds and animals survive—makes it easier for them to hide from their enemies.

Wrong: Camouflage is all right in nature—all wrong in industry. Monotone-colored machines cause eye fatigue—millions of man-hours lost.

Color Dynamics

Executives in many industries find this scientific system of using color minimizes workers' eye fatigue—builds up their morale—improves quality and quantity of production.



• Any Pittsburgh representative can help you apply Color Dynamics with the aid of a Pittsburgh Color Selector. Selection of correct focal colors is made by placing different color panels behind a Vista Green panel (the color generally recommended for non-critical parts) so color can be observed through a round opening. The test is completed by placing a piece of material being processed, across the opening. The focal color which contrasts best with machine and material—is the correct color to use. The above illustrations show Color Dynamics at work. The last panel illustrates how the use of correct focal color provides proper contrast between material and machine—emphasizing critical parts while Vista Green makes non-critical parts recede.

PERHAPS the simplest way to arrive at an understanding of the Pittsburgh system of Color Dynamics is to think of it as *exactly the opposite of camouflage.* Instead of obscuring and hiding, color becomes an agent charged with the duty of making it easier for workers to see their work.

On machines, color is used to highlight the operating parts so that they stand out—to give a clear contrast between the machine itself and the material being fabricated—to focus the worker's attention on his job. By this means, eye wandering and nervous tension are minimized.

For motorized trucks, cranes and overhead conveyors (which are responsible for many industrial accidents) colors of high visibility are employed. These act as danger signals and are recognized as an important safety factor.

• The practical value of Color Dynamics may be tested by applying these principles to one or two machines in your plant. For a comprehensive explanation of this new system of utilizing color-energy in industry, write for a free copy of our book, "Color Dynamics," Pittsburgh Plate Glass Company, Paint Division, Department TW-10, Pittsburgh 22, Pa.

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Factoring Service

Puts your sales on a cash basis
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55 MADISON AVENUE • NEW YORK

course, have high reliability; but there may be little correlation between these factors and the degree of, say, efficiency on the job. Its validity is low.

Another difficulty management must keep in mind is that many jobs are so varied in their tasks or so complex that no single test will suffice. It is true that there are jobs in some industries which are so well defined, so simple, that a test with a high validity and reliability can quickly be found. For example, the abilities required by a typist or drill-press operator are clearly recognized and easily tested. But that is not the case in the finishing industry. Therefore, we must search not for one test but for a combination of tests, or a battery of several tests.

For instance, let us assume that you are experimenting with five tests known as *A*, *B*, *C*, *D*, and *E*. After recording the scores made in these tests by operators of different jobs you compare the scores with the efficiency ratings of the same operators.

You may find that the operators who are rated satisfactory or better in efficiency usually score as shown below in each test. (It will be found more convenient to convert the raw test scores into quartiles or percentiles.)

	Score in Quartiles Tests				
	A	*B*	*C*	*D*	*E*
Hand-Folder	1st	1st	3rd	2nd	0
Frame Operator...	1st	4th	2nd	0	2nd

The 0 under test *D* and *E* indicates that, as far as these jobs are concerned, these tests are of no value as there is no relationship between the score and the efficiency rating.

Suppose all applicants be given their battery of tests. On the basis of this experience with operators known to be efficient, you would be justified in assuming that the applicant who scored high in *A*, *B* and *D*, would be a potential hand-folder. If he flunked in *B*, however, but scored in the second quartile or better in *C* and *E*, you would regard him more as a potential frame operator.

It is obvious, of course, that this objective in testing can be reached only after a long period of patient research, statistical study, and much experimenting. Even then, you will want to consider factors other than efficiency. How do these test scores compare, for example, with the accident records of these same operators What effect does age and experience have on the efficiency rating? Or on the test score?

To gain the greatest benefits from testing involves much labor and expense. There is this comforting fact, however, you can begin to derive benefits quite early in your program. You may not reach the point of using batteries of tests for selection for some

BUILT FOR TOUGH JOBS!

• The invisible strength of this mighty giant lifts and places heavy loads at your command.

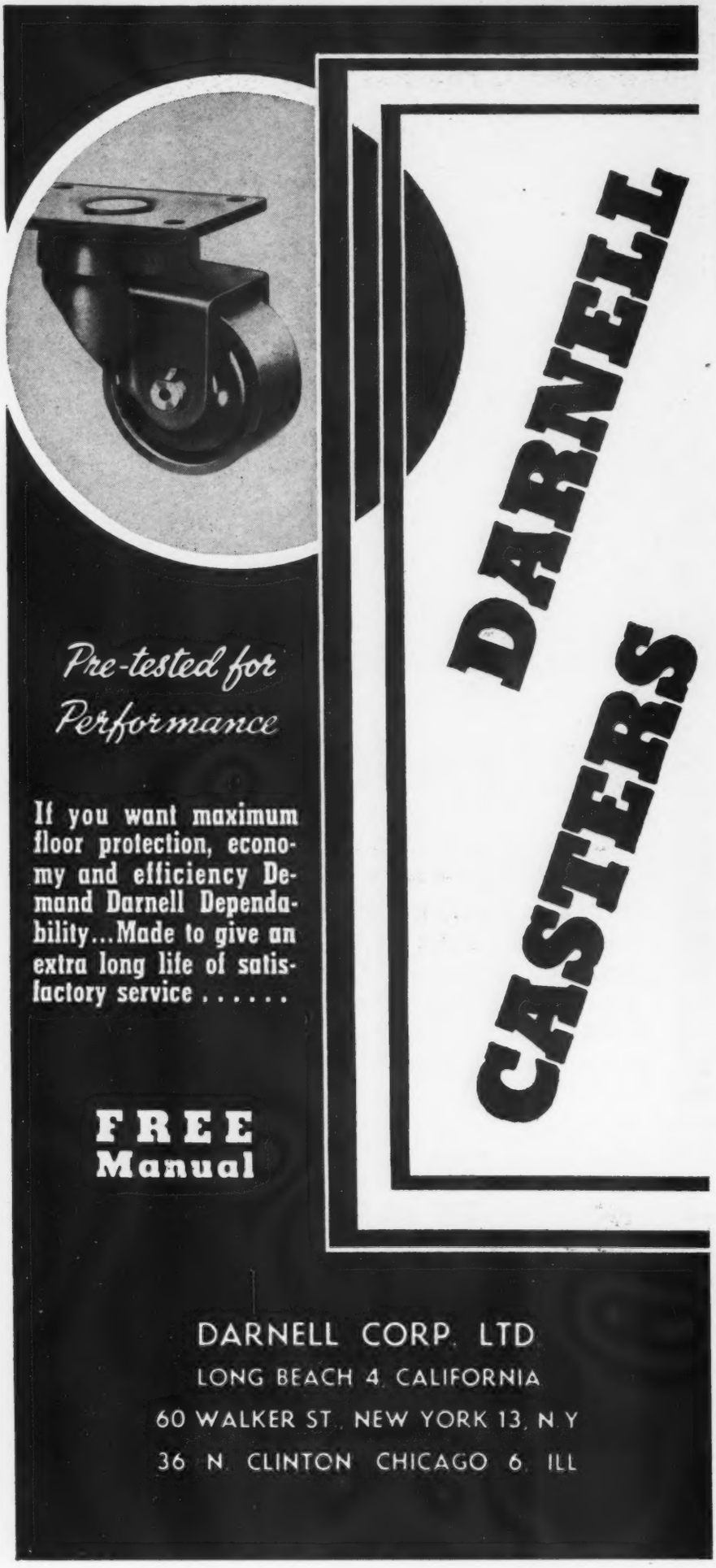
The rugged construction of Shepard Niles Single Beam Cranes assures added handling economy resulting in extra value in terms of production economy. Shepard Niles Cranes are made tough and durable to give long, dependable service. They are made in many types, capacities and spans to fit your particular need.

To meet competitive production schedules — to maintain smooth-flowing production lines, material handling equipment must stand up under severe operating conditions. You'll get capacity load-handling, long efficient service at low maintenance cost with a Shepard Niles Hoist.

Shepard Niles
CRANE & HOIST CORPORATION

Improve your competitive position in the industrial world. A request will bring you full data and tell you how you can put a Shepard Niles Crane to efficient use in your factory.

452 SCHUYLER AVE. • MONTOUR FALLS, N. Y.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Pre-tested for Performance
If you want maximum floor protection, economy and efficiency Demand Darnell Dependability...Made to give an extra long life of satisfactory service . . . . . .
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time, but even one or two tests which reliably indicate certain attributes and qualifications can be of great value to the interviewer in more selective placement.

One final word. Testing must be sold to the applicant and employee. Only the other day I heard an employee comment disparagingly on "being asked to play with blocks." He had not been sold, and such comments can ruin any testing program. Train your interviewer how to administer tests and gain the goodwill of the applicant, or don't test at all.

Carding of Jute

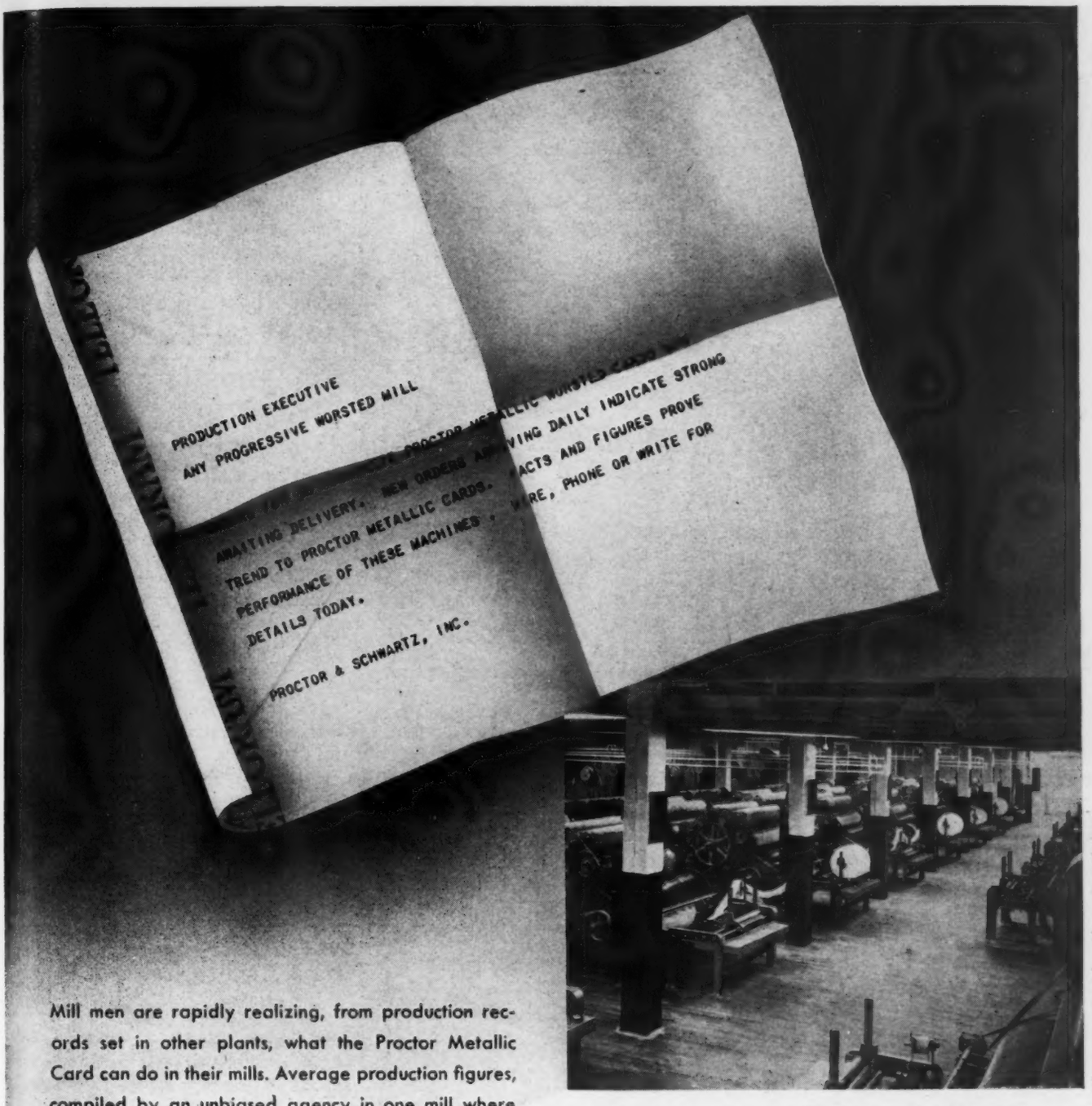
(*Continued from page* 133)

size rolls are employed. Workers and strippers are usually 14 in. in diameter, and doffers are usually 18 in. The stock is fed in the form of a sheet through a pair of fluted rolls which crush fragments of bark and stick adhering to the fiber by pressing them against a shell between the feed roll and cylinder.

Finisher cards with cylinders 5x6 ft., with five and six pairs of rolls, and with two doffers are being widely adopted in preference to the older types, because of their capacity for the production of fine counts. More space is available for disposal of the workers and strippers, so that there is less risk of inefficient carding because of the fiber on the heavily loaded worker being robbed by the succeeding stripper without having been acted upon in the correct manner by the cylinder. Large-size cylinders also permit the use of large-diameter workers and strippers to ensure more efficient carding and less loss of valuable fiber.

The use of two-doffer finisher cards increases the average length of the staple in the carded sliver. A single doffer is not completely effective in stripping the cylinder, and any fiber retained is picked up by the second doffer and prevented from passing around the card a second time and being unnecessarily shortened. On two-doffer cards, a shorter draft may also be employed to conserve fiber length. If desirable, a heavier sliver can also be taken off, so that a higher production is possible.

DOUBLINGS. In the manufacture of fine counts, the number of doublings inserted prior to spinning has an important bearing on yarn evenness. It is desirable that these doublings be inserted at as early a stage as possible in the preparatory processes. In the case of two-doffer cards, doubling of the ends from each doffer results in


PRODUCTION EXECUTIVE
ANY PROGRESSIVE WORSTED MILL
AWAITING DELIVERY. NEW ORDERS ARRIVING DAILY INDICATE STRONG
TREND TO PROCTOR METALLIC CARDS. FACTS AND FIGURES PROVE
PERFORMANCE OF THESE MACHINES . WIRE, PHONE OR WRITE FOR
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Mill men are rapidly realizing, from production records set in other plants, what the Proctor Metallic Card can do in their mills. Average production figures, compiled by an unbiased agency in one mill where Proctor Metallic Cards replaced older machines, reveal output increases of 185% per card. Average production per card, per hour, jumped from slightly more than 32 pounds to nearly 93 pounds. The survey further revealed that not only did production increase materially, but quality of carded wool was actually improved. For a greater yield of top and other salable carded wool, from the same amount of scoured wool, the record of Proctor Metallic Worsted Cards is unequalled. No wonder the trend continues so steadily. It will pay you to investigate the details of these Proctor Metallic Worsted Cards, today.

View in the card room of Cleveland Worsted Mills where the shift to Proctor Metallic Cards has been completed. The entire room is now complete with 18 of these latest type cards—with 6 more on order and in the process of building. The production record established by these machines in this mill is available to those who write.

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PROCTOR & SCHWARTZ • INC

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"H-W" *Equipment*

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158 SUMMER STREET

BOSTON 10, MASS.

a more uniform sliver at the front of the delivery roll.

In the manufacture of fine jute yarns required for high-quality competitive fabrics, the division of each fleece (card web) as removed from the doffer into two or three sections, the compression of these sections in bell-mouth conductors, and the drawing of them through a card drawing head—as in flax-tow preparation—result in a sliver of maximum uniformity and strength.

Levelness of feed to the finisher card is a determining factor in fiber size, sliver cleanliness and regularity, and percentage waste-loss incurred in this operation. The relative merits of can-packed sliver and of roll-feed packages still constitute a subject for controversy, although there is a growing opinion in favor of the latter. Among the advantages claimed for roll packages are economy in floor space, as a result of the greater weight of material which can be built in roll form. A large-size can, mechanically packed, holds approximately 50 lb. of sliver, while a roll package 36 in. in diameter and 6 in. wide will weigh approximately 100 lb. This greater weight insures a more level feed which, in turn, increases yarn strength and uniformity.

The economies made possible by using roll-feed packages are also an important point in their favor. These economies include a substantial saving in initial expenditure and maintenance costs of can containers. In consequence of the greater capacity of the roll package, the operator's work is substantially reduced, so that he can attend a greater number of cards.

CARD FEED ROLL. The single, pinned feed roll and shell common on older-type jute finisher cards are replaced on the new models by a large, pinned bottom feed roll with an unpinned roll set above it. The latter arrangement is less severe on the fiber and effects a substantial increase in staple length of the carded stock.

For the production of fine counts, light carding is essential. This factor necessitates the readjustment of roll settings and speeds, both of which must be determined by the fiber type and quality. For top grades of jute, the settings may be closed two or three gages on the standards used when carding heavy numbers.

The surface speeds of carding parts on breaker and finisher units do not differ materially when carding for medium and heavy counts, in which the rate of output is the main consideration. The speeds commonly used are shown in Fig. 1.

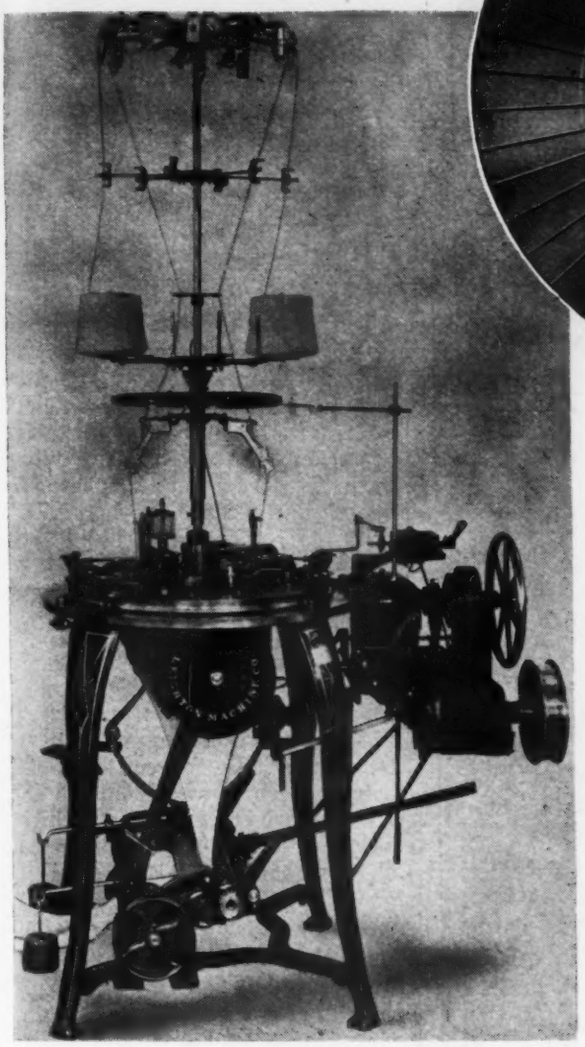
To obtain fine yarns competitive

LEIGHTON "OUTERDIAL" KNITTERS

We are the original builders of the "Outerdial" type which operates the horizontal needles toward the center, reducing yarn strain and allowing soft spun yarns to be knit with a minimum of breakage.

Each Leighton machine is precision built to rigid specifications to insure satisfactory and continuous smooth operation.

The Leighton Outerdial



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We are, as in the past, continually experimenting with new ideas and models, trying to give the mills a real flexible up-to-date profit making machine that they as well as ourselves can be proud of.

Over Seventy Years of Successful Machine Building and Marketing is our Symbol of Reliability

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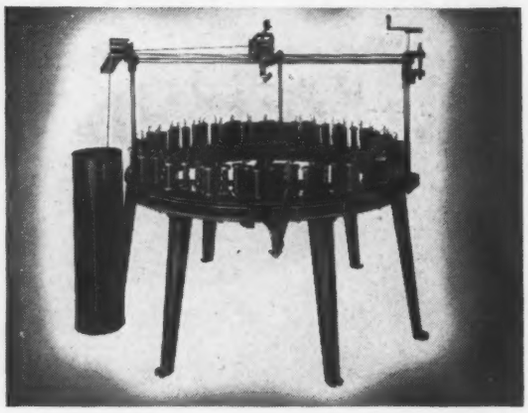
NEBUTTCO BRAIDERS NEBUTTCO



We are confident of our ability to give satisfactory service in arranging your braiding equipment for efficient production.

Our engineers are at your service.

Let us know your requirements.

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"Empire" is made in 18 clearly distinguishable colors. Large and small sticks as illustrated above.
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with dry-spun linen products, the speeds of the workers and strippers must be varied to effect the necessary degree of fiber splitting and cleaning. The following rules are generally used in determining the speeds to ensure best results:

When the fiber strands are coarse, with a fair amount of adhering matter, use a slow worker speed to permit maximum splitting action between worker and cylinder. To reciprocate for the slow worker, a high stripper speed will be necessary to throw out impurities.

For fiber of a soft, clean nature, fast workers and slow strippers will prevent undue fiber breakage and loss in carding. Strong clean material of a hard nature will require slow workers and slow strippers.

Jute of a dirty nature and possessing a fair amount of nep will require carding with slow workers to open up the material and fast strippers to facilitate removal of extraneous matter.

While cleaning is affected by suitable regulation of roll speeds, reduction of fiber-strand dimensions is determined by pin density, angle, and projection, so that these are important factors in determining the suitability of a finisher card for fine work. To insure maximum splitting action in conjunction with effective holding capacity for light card webs, pins should be designed to taper from the point of projection above the stave. The pin angle on the various rolls has been established in practice as cylinder 72°, workers 35°, and strippers 42°.

Cotton Price Levels

(*Continued from page 102*)

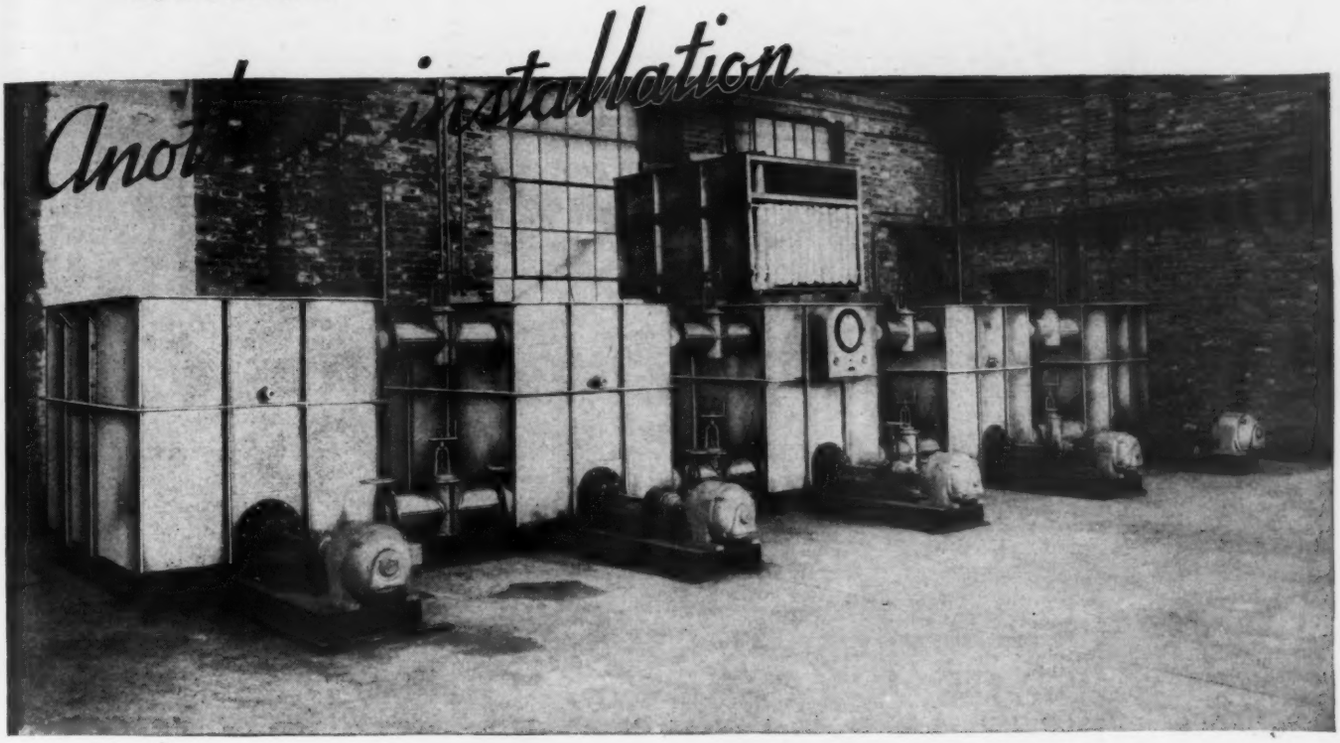
all manufacturing; but cottons started at 38¢ an hour, all manufacturing at 62¢, so the jump for cottons is far greater, percentagewise. The bidding away of the best manpower by high-pay industries in a tight labor market will press hard on textile costs. It also will affect output per man-hour, which thus far shows no sign of rapid pickup from wartime levels, particularly with new-equipment deliveries delayed.

The immediate potential sore spot is inventories. There has been a substantial accumulation of cloth by mills in recent months, which is traceable to OPA's pricing policy since June 30. That policy is to advance textile prices only some weeks after raw cotton has gone up first. Mills naturally have withdrawn from the market each time the raw fiber quotation spurted; and, meanwhile, cloth stocks have been built up.

The inventory movement may not

Obermaier
Reg. U. S. Patent Office

STIENEN
TRADE MARK



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Five units, each, of 200 pounds capacity, can be used singly or, by opening the connecting valves, in any combination of units up to five, for one color.

1000 pound batches, in one uniform color, or five 200 pound batches of different colors, can be dyed at one time. There is no possibility of felting as the yarn remains stationary.

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HILD Floor Machines

KEEP ALL YOUR FLOORS *Clean* AND *Slip-Safe*

Left—HILD Tank Type Shower-feed Floor Machine

Right—HILD Plain Handle (Standard) Floor Machine

HILD Floor Machines are designed for use with the easily interchangeable attachments pictured below to condition and maintain floors of all kinds . . . either in the mill or in office areas. Scrubbing with the Tank-Type Machine and the patented HILD Shower-feed Brush gets floors cleaner with less scrub-soap solution . . . cuts soap costs . . . does not splash water on machinery or furniture. Scrub-soap solution is fed from the tank on the handle of the HILD Floor Machine to the back of the Shower-feed Brush . . . then passes through accurately spaced holes penetrating the brush back between each row of bristles.

HILD Floor Machines speedily scrub open areas in lanes between machines . . . yet are easily guided into hard-to-reach spots under and around machinery. They are sturdily built for long, trouble-free service.

HILD Shower Feed Brush

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dyed and twisted to your specifications.

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be a "stop" signal, but it certainly is no green light. The ultimate consuming market seems avid, if not exactly ravenous, for the goods—whereas, normally, goods back up on producers because output exceeds demand, and a downturn can be forthrightly expected. The danger is that the unloading of such accumulated merchandise cannot be carried on in orderly fashion, when it begins. Then, it could break the market or force a production cutback, or both. The worst can be avoided, yet the selling of warehoused cloth is bound to place additional pressure on a market for cottons that is already growing uneasy because of costs and prices.

A recession in general business activity and national income in 1947 is being widely predicted—and just as widely disputed—among expert economists and business observers today. The general business outlook always requires careful and periodic reexamination in separate discussion. All that textile men can do at this point is to face the possibility of recession and consider what of many things it might mean to the industry.

"Recession" can cover a multitude of downswings, and it can make a lot of difference how severe any drop that comes may be and whether over all prices go down as much as output. Even most of those analysts who do look for a downturn expect it to be mild, both in industrial activity and in prices, and so in national income.

Almost any recession would naturally call for readjustment in textile prices and output. It is conceivable, but not likely, that after further general inflation, a little dip in business activity would leave national income higher than now—and so the dollar market for textiles larger than today.

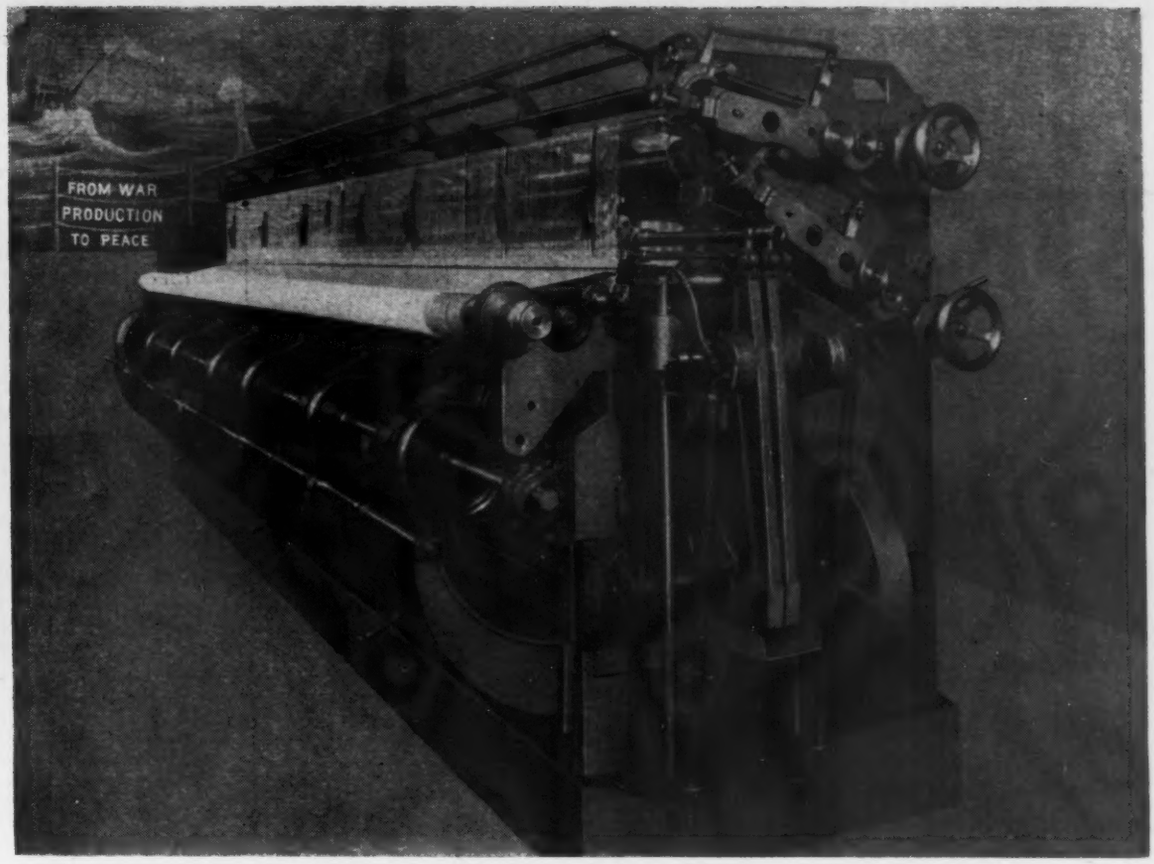
In any major readjustment, raw cotton would play a principal role. Fiber prices plummeted 75% from their high in the 1920-1921 crackup, but no such drop is possible tomorrow. The government must by law grant loans to farmers on raw cotton at 92½% of "parity" and that will hold the market price to about 25¢ a pound next year as compared with 38¢ today. So, at most, cotton could go only about one-third lower. But cotton prices may prove even more resistant than that. In the 1920 price collapse, an 18% bigger crop was coupled with curtailed use at mills, whereas prospects for the 1947 cotton pick here and overseas necessarily are yet unknown.

Labor costs are fairly sure not to be decreased much, both because of union influences, and because of increased political pressure for a 75¢ minimum wage-hour law.

Indeed, a union floor under wages

ROBACZYNSKI

TRICOT



A design that will assure bigger production over a long and carefree life. See it in operation at our plant.

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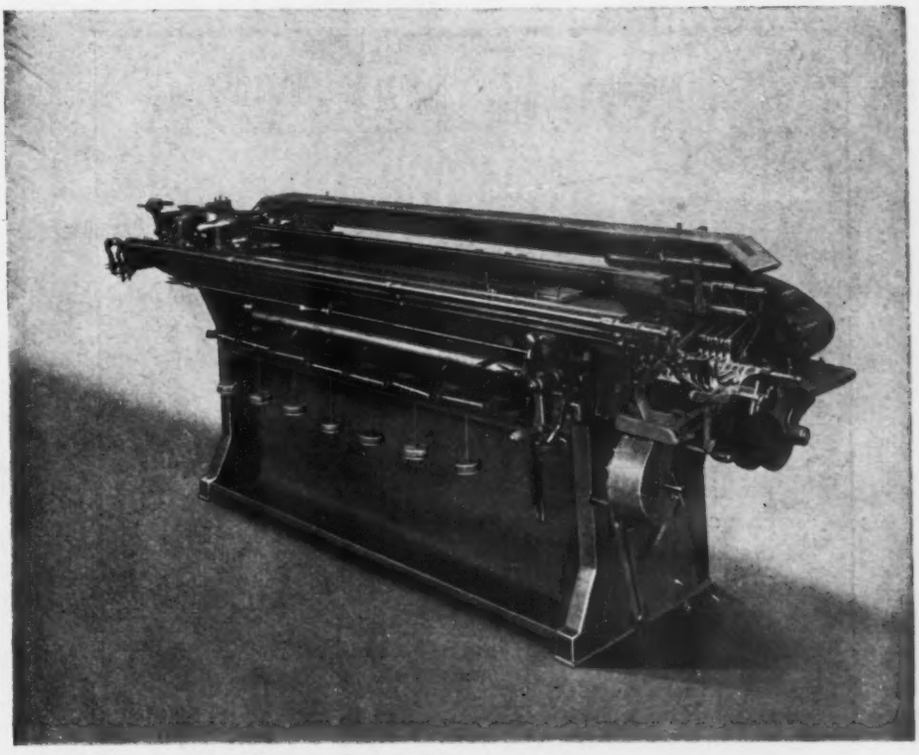
Designed to produce the most intricate stitches such as cable, braid, flat on flat, open work, herringbone, etc. Note heavy construction with receptacle to prevent soiling of goods. Simplest machine of its type to operate. Send for complete information.



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EASY TO USE—SUDS BETTER!

Drummond Flakes are so easy to use! And you couldn't get a flake that suds better! Note these Drummond Soap features: high body with low alkali content . . . leaves fabrics perfectly clean with softer feel, brighter colors, and whiter whites.

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Box **P-870,** Textile World
330 W. 42 St., New York 18, N. Y.

and government floor under farm prices will be characteristic of any business slump that might ensue next year.

On balance, there is some chance that cotton textiles will get caught in a cost squeeze if general business goes down, but there is less chance of a squeeze if it stays high. But no one can be sure of the next impact on prices, output, and earnings in a readjustment of textile values with national income, if 1947 sees a recession.

Competitively, in any case, cotton textiles are and will remain in a squeeze. Rayon is just as cheap as raw cotton at 25¢, and it is cheaper than cotton today. Plant capacity and the slowness of its expansion are all that limit rayon inroads on many cotton markets right now. Even paper is threatening to substitute in coarse-goods fields with cotton at 37¢, particularly after paper's gains from wartime research in quality and applications. Wool has held fairly stable in price, and it is now edging into other corners of cotton's old strongholds.

However much ground the industry may lose competitively, and however vulnerable it may be now to a shift in the economic winds, there is no getting away from that wartime backlog of demand. It is the No. 1 fact with which textile appraisals must start and finish. With that in the picture, prospects cannot become or remain too bleak for very long.

Useful Accessories For the Textile Mill

Electronic Timer

Electronic timer, type 30HLi, an automatic timer for intervals from 1/20 sec. to 4 min. has been announced by Photoswitch, Inc., 77 Broadway, Cambridge 42, Mass. It is recommended for process control and machine timing when long-life, repeat-cycle operation, or precise accuracy is required. The timer provides for four basic types of timing: interval, delayed action, automatic repeat, and programming, as well as variations of these fundamental types. It employs only one tube and one relay, and operates on 115- or 230-v., 50- to 60-cycle a.c.

Recessed Troffers

New recessed troffers featuring accurate 48-in. lengths and said to require no more ceiling length than fluorescent lamps and their lampholders have been announced by Edwin F. Guth Co., 2615 Washington Blvd., St. Louis 3, Mo. Knock-out pieces in the ends are designed to permit lampholders to be inset so that they are flush

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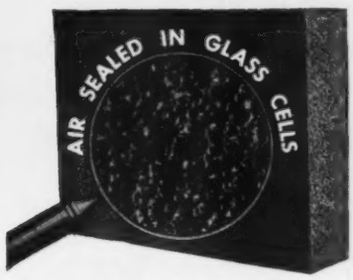
PC Foamglas is not affected by moisture, vapor, vermin, or the fumes of most acids. It is fireproof, waterproof. It does not swell, rot, flake, warp or check. Thus, factors that cause many roof insulation failures do not cause Foamglas to lose its original insulating value.

PC Foamglas licks tough insulating problems on roofs, in walls and floors. The big, oblong blocks are light in weight, easy to handle, but still rigid, strong and durable. PC Foamglas stays where it is laid. It does not creep, slip, pack down or powder.

In all sorts of plants all over the country, wherever conditions are really tough, PC Foamglas does an efficient job. It helps to maintain temperature levels, to minimize condensation.

Here you see PC Foamglas being laid in hot pitch over a layer of roofing felt. Later the specified built-up roofing will be applied and finished with a gravel surface. The PC Foamglas cant strips can be seen along the parapet wall at the right.
Architect: E. Brielmaier & Sons Co., 735 N. Water St., Milwaukee, Wis.



Makeshift wooden cant strips have long been a source of roofing trouble. Now you can get cant strips made of PC Foamglas. You need not fear that they will check, swell, shrink or rot.

You will find a lot of worthwhile information on the use of PC Foamglas insulation for specific purposes in our authoritative, illustrated booklets. Send in the convenient coupon for your selection of *free* copies. Pittsburgh Corning Corporation. Room 183, 632 Duquesne Way, Pittsburgh 22, Pa.

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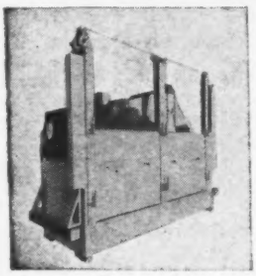
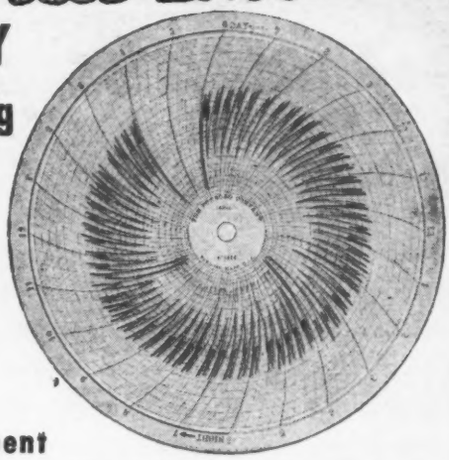
For UNIFORMITY
in Yarn Conditioning





Use FLEET LINE Equipment

The chart shown herewith was taken from the recording instrument on a Fleet Line Yarn Steamer and Conditioner in Guerin Mills, Woonsocket, R. I., and illustrates the UNIFORMITY of operation which prevails with this machine.

This results in exceptionally uniform yarn, and the mill is able to handle filling bobbins and larger packages interchangeably. Operation is wholly automatic.

Guerin Mills is conditioning its entire yarn output with this one machine, handling 16 duck baskets, stacked in 2 levels, at one time. Each cycle on the chart means 800 lbs. of yarn conditioned.

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SOMERSET, MASS.
P. O. BOX 402, FALL RIVER, MASS.

with the outside surfaces of the ends. All the troffers have 300° white reflectors; deep types will hold one, two, or three 40-w. lamps, and shallow types will hold one or two 40-w. lamps.

Heavy-Duty Switch

A new heavy-duty appliance switch, with several unique features, has been announced by Trilmont Products Co., Philadelphia. The switch is reported to be rugged and to have a UL listing of 20 amp. at 125 v. It has a miniature neon lamp, visible from three directions, which serves as a warning when the current is on; it is a double-pole single-throw switch.

Corrosion-Resistant Valves

Reinstatement of 18-8 Mo alloy-steel corrosion-resistant valves and fittings, regular manufacture of which was discontinued during the war, has been announced by Crane Co., 836 S. Michigan, Chicago. The line, as reinstated, includes globe, gate, check, and relief valves in both screwed and flanged patterns; liquid level gauges; and screwed and flanged fittings. Sizes in screwed-end patterns are ¼ to 2 in. and in flanged-end patterns are 1 to 4 in.

The valves and fittings are recommended for service in handling acetic acid, nitric acid, alum solutions, alkalies, limes, bleaching solutions, fatty acids, sulphite liquors and vapors, sulphurous acid, and a large number of other industrial chemicals.

Tricot Warping

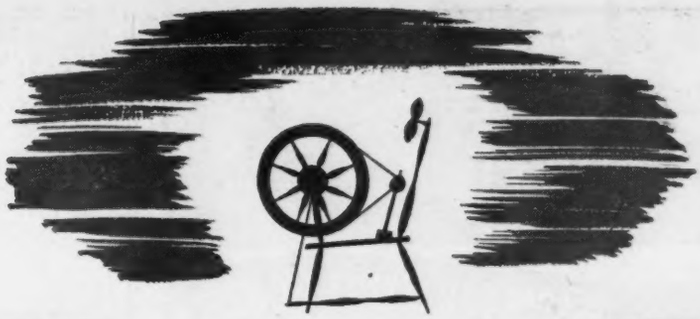
(*Continued from page 117*)

mately the heaviest obtainable with the rod-type tension.

The tension device illustrated in Fig. 3 shows two sets of washers; that is, one set of washers on each tension rod. For tricot, however, tensions are usually obtained with washers on only one rod; when tensioning is done in this manner, the washers are placed only on the movable rod. No. 6 washers are generally used for tricot yarns, although the size, weight, and number of washers may be varied on the rod-type tension as well as on the simpler manual-washer system.

WARPER HEADS. New warpers are driven by variable-speed motors which permit slow starts and gradual accelerations. Speed ranges of motors are adjustable for varied yarn conditions and are arranged so that operators can make the change quickly when a new style requires a different range of speed. Maximum speeds of new warpers are said to be around 800 yd. per min.; the average speeds of older machines usually range from 500 to 600 yd. per min.

Tricot spools are of two types: pressed-steel, zinc-finished spools and magnesium spools. Some mills are re-



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be Specific –
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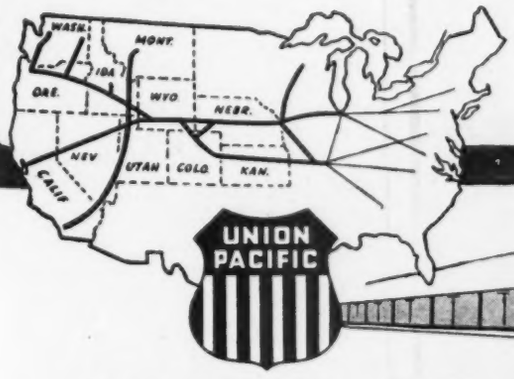

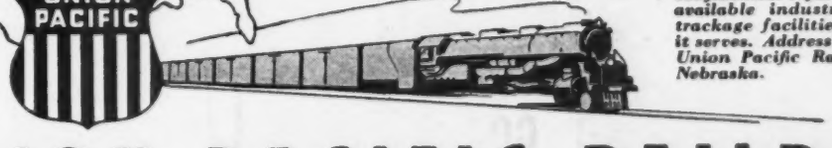

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placing steel spools with magnesium because the latter's lightness is said to reduce handling and shipping costs. However, all warper spools should have careful attention. They should be inspected regularly for rough spots, dirt, distorted flanges, etc. Crocus cloth or fine emery cloth is generally used to remove the rough spots; an automobile-body cleaner is often used to remove the dirt; wax is usually employed to polish the spools.

Preparation for Printing

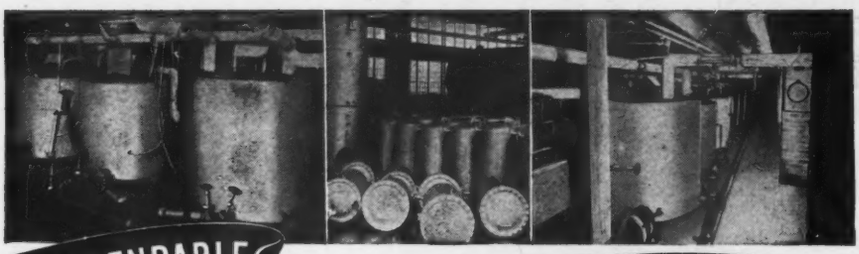
(*Continued from page* 127)

underneath the edges of the doctor blades, are carried through the nip after having been saturated with print paste, and in various ways are a great nuisance as a cause of defects.

If printing is carried out over dyed or tinted grounds on too hairy a cloth, there is some possibility of the singeing fault, known as creasing, being responsible for a similar creased appearance in the dyed state. Such forms of unevenness are likely to level out if the goods are mercerized before printing. In singing spun viscose-rayon goods which have been heavily sized with sago, there is some risk of the size being more tenacious if the goods have been singed at too high a temperature.

The sizing materials, which have been added to assist in weaving the cloth, must be removed before printing. These materials are mainly starchy and require the use of diastasic enzymes for their complete removal, if this should be necessary. The reader is referred to an article, "Enzymes in Printing," giving some details of this method of starch removal, in TEXTILE WORLD for June, 1945, page 145. It is pointed out there that for certain styles of print, notably blotches on better quality goods using vat colors, complete starch removal will insure more level results. For rapid working, the high-temperature enzymes are recommended. An authority on textile printing points out that high-speed preparation and printing may be quite satisfactorily carried out on cheap lines of cotton goods without the use of enzymes. On the other hand, starch removal may be necessary where synthetic resin finishes are to be applied.

The amount of starch size in a cotton or spun-rayon fabric may run up to 15%. This, together with natural impurities in cotton (5%) or in linen (25%) makes a formidable total for removal. Rot steeping and acid steeping both rely on the fermentation process set up while the cloth is lying in the wet piled state. Both processes are risky and hard to control and re-



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Additional information about DC Silicone Greases is contained in data sheet No. X 7-1.

DC 996—DC Silicone Greases were first used to lubricate bearings of silicone insulated motors subjected to accelerated-life testing, which includes operation at temperatures of 200° to 310°C. (392° to 590°F.) and exposure to 100% relative humidity. In 2½ years of continuous testing none of these silicone insulated motors has failed. Specifications and methods for applying DC 996 are given in leaflet No. X 3-1.

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quire fairly extensive washing prior to saturation with lyes in preparation for the lye boils. Dried-out, dilute acid on outside folds, etc., can lead to tendering of the cellulose fiber. Uncontrolled fermentation can also bring about degradation of the cellulose.

Where it is not considered advisable for economic reasons to desize (as in utility cotton lines), there should be, if possible, some control of the amount of size applied prior to weaving. A minimum amount of easily removable size applied in a level manner should be the aim. Where appreciable amounts of starch have been applied as size and distribution is suspected to be uneven, it is worth noting that lime boiling will tend to fix such size by a form of occlusion. Caustic boiling is less deleterious, but the cloth will likely require more bleaching treatment with hypochlorite or hydrogen peroxide later on. Starch fixed in the lime boil cannot afterward be satisfactorily removed, and may lead to trouble in printing. If really clean cloth is required, preliminary enzymatic desizing with subsequent caustic boil and the usual bleaching treatments will give the best results.

RAYON DESIZING. In desizing rayon, the type of size used must first be ascertained. *Starch* is revealed by the iodine test (blue-violet). *Glue* or *gelatine* may be detected by treating the boiling-water extract of a sample of cloth with dilute copper-sulphate solution and observing a violet precipitate. A violet color is also given to a cold water extract by addition of Fehling's solution. The latter is an aqueous solution of copper sulphate and rochelle salt (potassium sodium tartrate $KNaC_4H_4O_6 + 4H_2O$). Another test for gelatine is precipitation by tannic acid solution. *Vegetable gums* give a white voluminous precipitate with lead acetate in a cold water extract, redissolving in acetic acid. *Dextrin* may be detected by concentration and cooling of a cold water extract, which is then acidified and treated with potassium iodide to give a violet to brown reaction if dextrin is present. The polarimeter gives a levorotation with gums and a dextro-rotation with dextrin. *Fats and oils* will give fatty precipitations when a boiling soda extract is treated with hydrochloric acid. Certain dyes (Sudan Red7B for instance) will color fatty residues when a sample of the fabric is treated with an alcoholic-aqueous dispersion of the dye. Linseed oil usually gives a brownish stain when spotted with sodium-sulphide solution.

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may be removed by hot water and soap treatment. Proteolytic enzymes may also be used for speedier working if required. Fats and oils require the use of alkali in the scouring liquor, except in the presence of cellulose-acetate rayon, when alkali must not be used unless it is the intention later to proceed with saponification of the rayon. Linseed oil sizes (not so much used today) need special care in removal, particularly if they are old and resinified. Soap-and-soda-ash baths, two if possible, are recommended; the first up to 140° F., the second up to boiling point. Use of one of the proprietary types of organic solvents may also be necessary. Another method involves the steeping of the goods overnight in a warm bath of the type just described and finishing off in the morning with a boiling bath of the same. Sodium perborate, up to 2 lb. per 100 gal., has been found useful as an addition to such liquors. Cold dilute caustic liquors up to 9° Tw. are effective in the removal of linseed-oil size from viscose-rayon crepes. All of these methods refer mainly to cloths made from filament yarns and of crepe constructions. Spun viscose-rayon fabrics usually have slashed warps and contain starchy matter as size; the removal of this has already been dealt with.

SCOURING. Processing between desizing and bleaching proper may range from very mild soap scouring for rayons to prolonged alkaline boiling under pressure for cottons, linens, and mixtures thereof with viscose rayons. The scouring of cotton and linen is aimed largely at removal of the natural impurities of the fiber. These impurities consist mainly of fatty and waxy bodies, pectic and margaric acids, and albuminous substances. Treatment with boiling alkalies under pressure converts such bodies into soaps, which are subsequently decomposed by the action of sours (after rinsing, of course) and are finally removed by thorough rinsing after the sours with mineral acids. Additional boils with weaker alkalies, caustic soda, and soda-ash, are often given to insure the complete removal of fatty acids still remaining on the cloth after the sours. Such boils are normally carried out in ordinary kiers and are intensified or multiplied as requirements dictate.

In scouring fabrics of vegetable fibers, two general methods are used, the caustic boil and the lime boil, both under pressure. The latter is the older method but the former is simpler. Lime boiling for goods which are not afterward to be printed is said to give better whites. Caustic soda 2½% solution, or soda ash 5% solution, may be used in the first lye-

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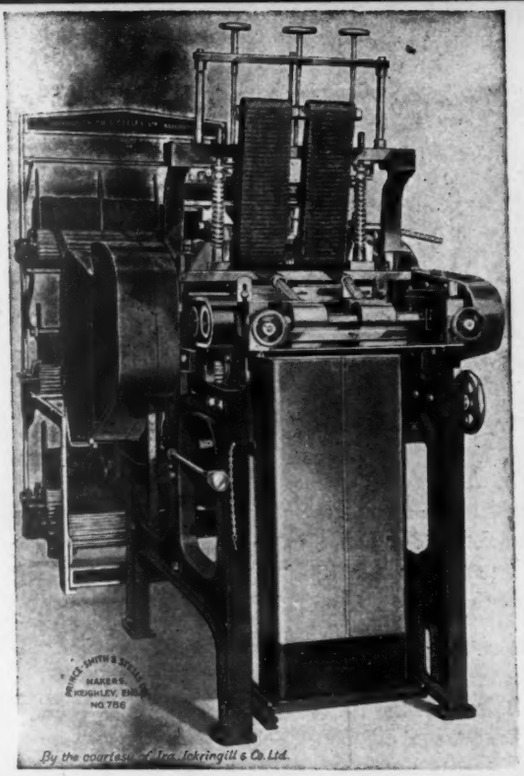

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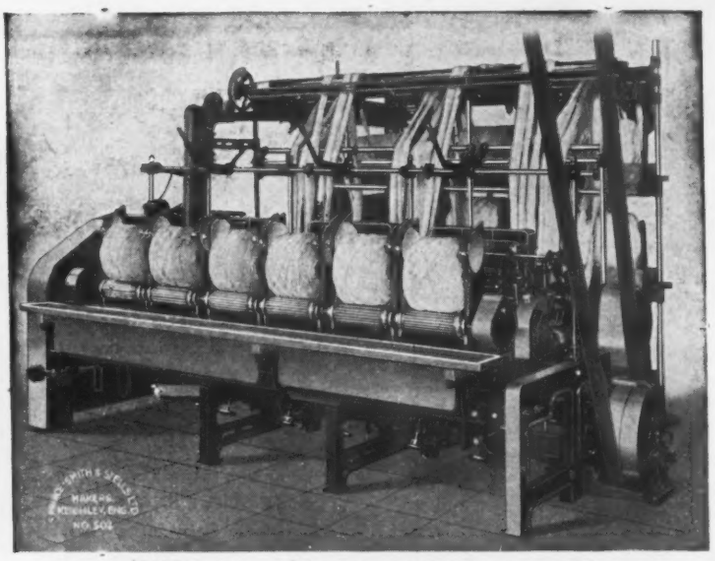

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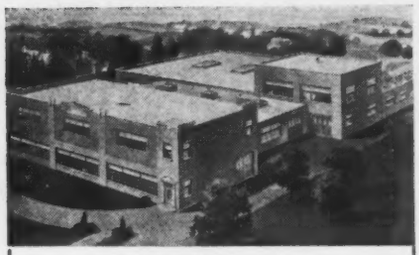

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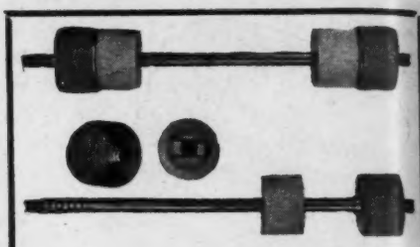
boil under pressure after the goods have been thoroughly desized by one of the methods previously recommended. Formerly, the goods were plaited down into the kiers by hand labor, but this method has been superseded by mechanical pilers which both saturate and pile the cloth into the kier simultaneously. The piler is in the form of a rotatable hollow metal trunk through which the liquor is passed into the kier along with the cloth. The rotating movement is so controlled that the saturated cloth is piled evenly into the kier with the minimum danger of channeling. When caustic is used, the risk of formation of oxycellulose is always present and air must be excluded. Lime boiling obviates this risk.

Lime boils use up to 5% slaked lime on the weight of cloth, boiling taking place in kiers under pressure as in the caustic boil. The fatty matter in the fibers is converted into insoluble lime soaps, and the pectic matter into insoluble lime pectates; while proteins and nitrogenous bodies are hydrolyzed and dissolved. Thorough rinsing and subsequent scouring with hydrochloric acid results in the formation of fatty acids and pectic acids. Saponification of these substances is brought about by soda-ash boils, with perhaps the addition of a resin soap.

It has been pointed out that caustic boils do not completely remove fatty matter, some of which remains within the fiber cell walls. This fact leads, in theory, to the idea that organic solvent extraction of the fatty matter is a logical step. Such practice, however, creates more difficulties than it solves and has never met with widespread approval. One suggested method of scouring based on the organic-solvent, fat-extraction theory is: (1) Desize with enzymes for removal of starchy sizing matter; (2) rinse hot to dissolve and remove solubilized starch; (3) extract fat with organic solvents; (4) remove proteins, pectic matter, etc. with soda boil; (5) rinse.

When souring after the scours, particularly when using the lime boil, hydrochloric acid should be used, since the calcium salt formed with hydrochloric acid is more soluble and therefore more easily removed in rinsing. Sours serve to decompose and remove insoluble lime soaps and lime and metallic oxides.

Modern methods of scouring include the Mathieson open-width continuous steaming process which involves the action of steam on alkali-saturated goods as they are passed continuously through a specially-constructed, open-width steamer. The main advantages are: (1) Thorough treatment of every part of the fabric



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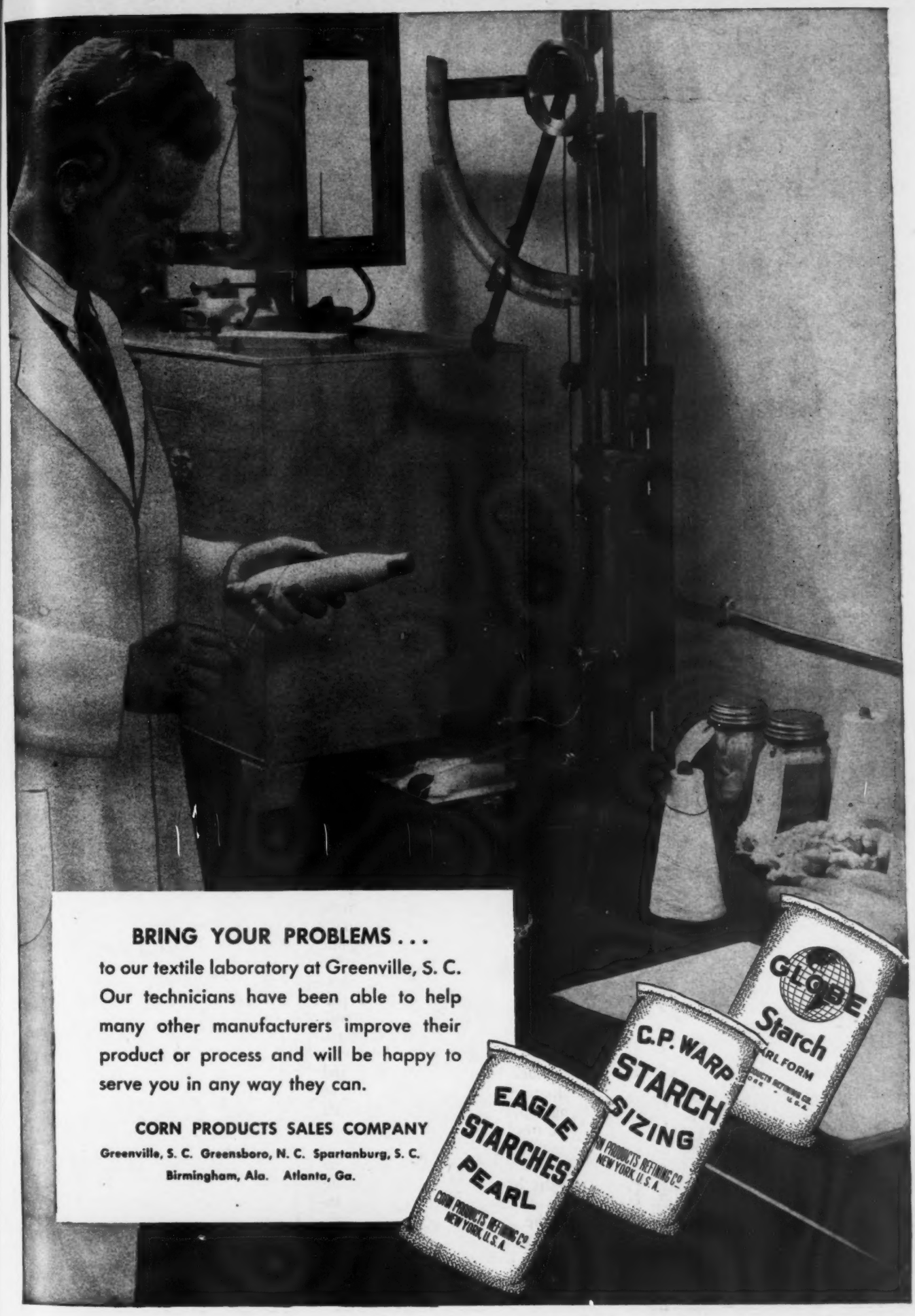
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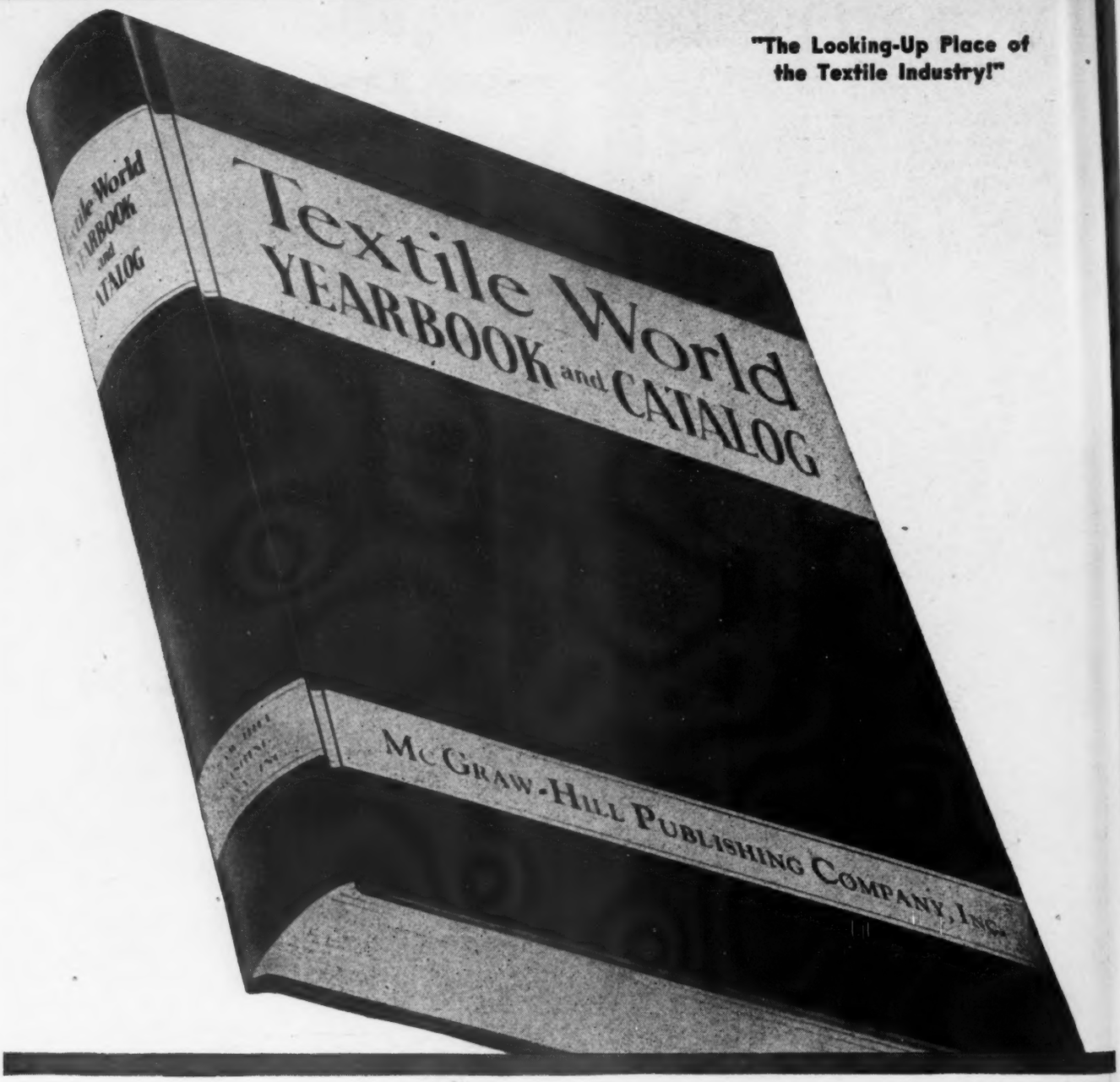

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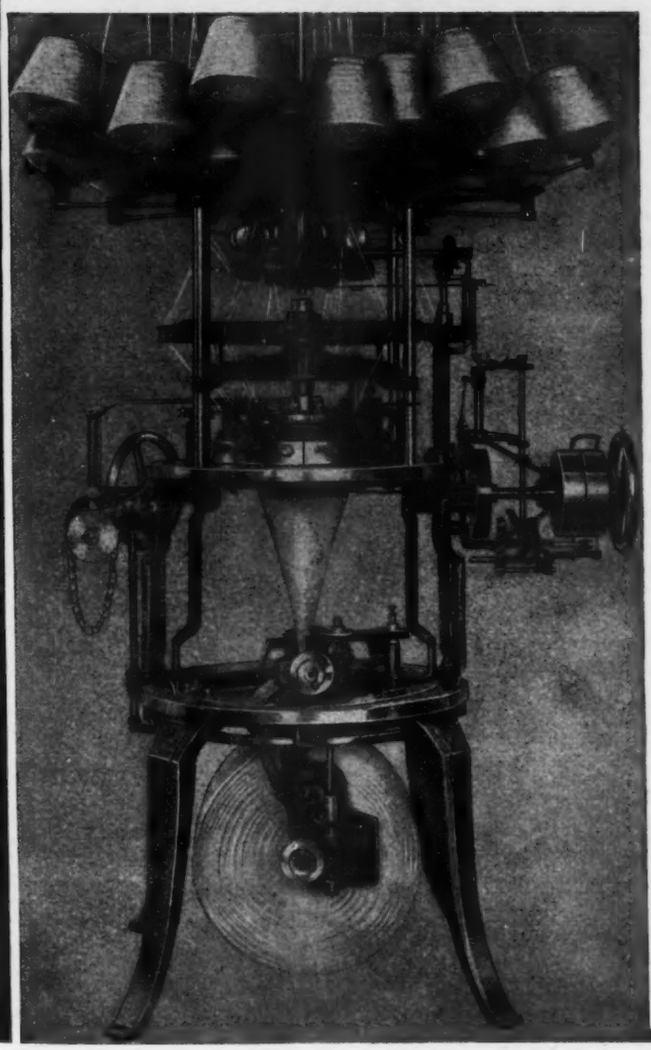

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is effected in the shortest possible time; (2) one single treatment takes the place of several scours which are necessary mainly to secure level treatment of the fabric in rope form and in the piled state; (3) problems presented by width, length, and weight of fabric are eliminated; (4) distortion, fraying, chafing, rope-marking, etc. are avoided; (5) process control and adjustment are greatly simplified.

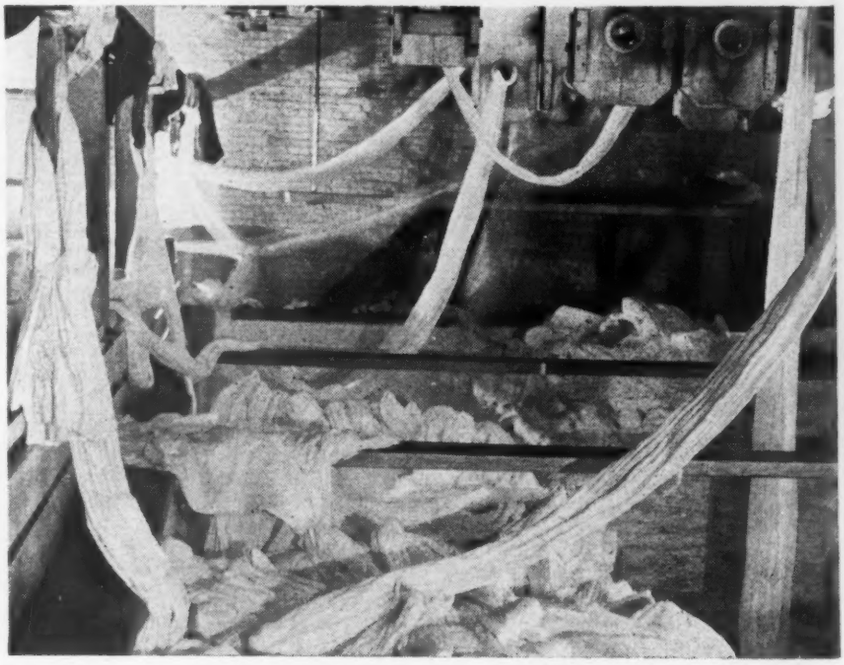
BLEACHING. Continuous hydrogen-peroxide bleaching in rope form is another modern development for high-speed, bulk-production scouring and bleaching. The basic unit of the hydrogen-peroxide continuous bleaching process consists of a saturator, a J-box, and a washer. One, two, or three of such units may be employed, according to the amount of scouring and bleaching required for a particular run of cloth. The saturator is used to impregnate the goods with scouring or bleaching liquor, the J-box is the heating or steaming apparatus, and the washer is used for final and thorough rinsing. Washers may be either of the tight strand or slack type. Operating speeds of 200 yd. per min. or faster are possible.

At the other end of the scale are methods formerly used in the scouring and bleaching of linens in the North of Ireland and in France, which often involve up to 25 separate steps, including grass bleaching. While the methods of kier boiling have not changed fundamentally for this class of goods, the actual bleaching treatment has been made safer and faster by the controlled hydrogen-peroxide bleach.

Many types of high-class linens are woven from ¾-bleached yarns. Cloth of this type requires only to be desized and scoured in open boxes or kiers to be ready for printing. Desizing with diastasic enzymes is the usual procedure, with subsequent hot-water washing for removal of degraded starchy matter. Scouring may take the form of boiling loosely in open kiers with soap and soda-ash solutions (1% soda ash, ½% soap calculated on the liquor). This treatment gives a full, absorbent cloth on which level prints, even in blotch styles, may easily be obtained. The wetting and emulsifying powers of soap seem to be necessary to secure the removal of degraded starchy sizing material, and a certain amount of fatty matter which may be included in the size mixture. Additional whiteness can be obtained, if desired, by peroxide bleaching.

The procedure just outlined is also suitable for treatment of spun-rayon fabrics, especially where level printing and clear whites are of first importance. On dyed grounds for printed white discharges, an absorbent fabric and a pure white are essential to begin with.

In the treatment of spun-rayon fabrics, the full characteristic and well-shrunk handle is often lost by improper processing. It is important that such fabrics always be treated with the minimum of tension in order to allow maximum shrinkage during washing, etc. Slack washers should therefore be used at all stages of wet processing, prior to and subsequent to printing or dyeing. Tight-strand washing is to be avoided at any stage, especially for goods intended for printing.



Piling bins for storing bleached fabric in rope form before it proceeds to other processes in preparation for printing.

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Principal specifications of Hooker Sulfides and other Hooker Textile and Dyestuff chemicals are given below. More complete information is available on individual Technical Data Sheets, copies of which will be sent you when requested on your business letterhead. . . . For continued high quality results in your textile processing, specify uniform, high quality Hooker Chemicals.

*AMERICAN DYESTUFF REPORTER, page 447, Oct. 23, 1944

PRODUCT *Chemical Formula; Molecular Weight*	HOOKER SPECIFICATIONS	SUGGESTED USES
Sodium Sulfhydrate $NaSH$; 56.1	$NaSH$ ..... 70 to 72% Fe ..... 5 ppm Max. Na_2S ..... 1 to 2% $NaCl$ ..... 1% Max. Na_2SO, $NaHCO_3$ ..... 1% Max. Cu, Ni, Cr, Mn, Pb ..... 1 ppm Max. Water of crystallization ..... 28 to 26%	Desulfurizing rayon; calico printing; in sulfur dye baths.
Sodium Sulfide Na_2S; 78.1	Na_2S ..... 60 to 62% Fe ..... 8 ppm Max. $NaCl$ ..... 1.5% Max. Other Na Salts ..... 2.0% Max. Cu, Ni, Cr, Mn, Pb ..... 1ppm Max. Water of crystallization ..... 36.5 to 34.5%	Desulfurizing rayon; calico printing; in sulfur dye baths.
Benzoyl Chloride C_6H_5COCl; 140.5	Freezing Point ..... −0.9°C. Min.	Manufacture of benzophenone, benzyl benzoates, synthetic perfumes, dyes and pharmaceuticals. In Friedel-Crafts reactions.
Benzyl Chloride (Omegachlortoluene) $C_6H_5CH_2Cl$; 126.5	Boiling Range 5° including ..... 179.4°C.	Manufacture of ethyl benzyl aniline, dyestuffs, intermediates.
CP—70 $C_{21}H_{29}Cl_{21}$; 1063	Chlorine ..... 71±2% Iron ..... 0.01% Max. Softening Range.....90° to 100° C. 72% chlorinated paraffin. A brittle resin, in powder form soluble in aromatic solvents, difficultly soluble in mineral spirits.	Treating textiles to make water, fire and mildew-proof.
Cyclohexanol (Hexahydrophenol) $C_6H_{11}OH$; 100.1	Cyclohexanol (High Grade) ..... 98% Min. Distillation Range.....100% 4° C. Max.	Solvent for dyes. Chemical intermediate.
Lauryl Pyridinium Chloride $C_5H_5N(C_{12.6}H_{26.2})Cl$; 292.0	Mottled tan, semi-solid. Solubility in water is 60 gms. per 100 gms. of water. Alkyl Pyridinium Chloride (Calc. as C_{12})—min. 85.0%	Cationic detergent. Wetting and cleaning agent for textile fibers. As a leveling agent and color modifier in dyeing.
Phosgene (Carbonyl Chloride) $COCl_2$; 98.9	Colorless gas at ordinary temperatures. Does not discolor a 0.1% solution of KI when vigorously bubbled through it for one minute. (Test for free chlorine.)	Dye intermediate; chlorinating agent.

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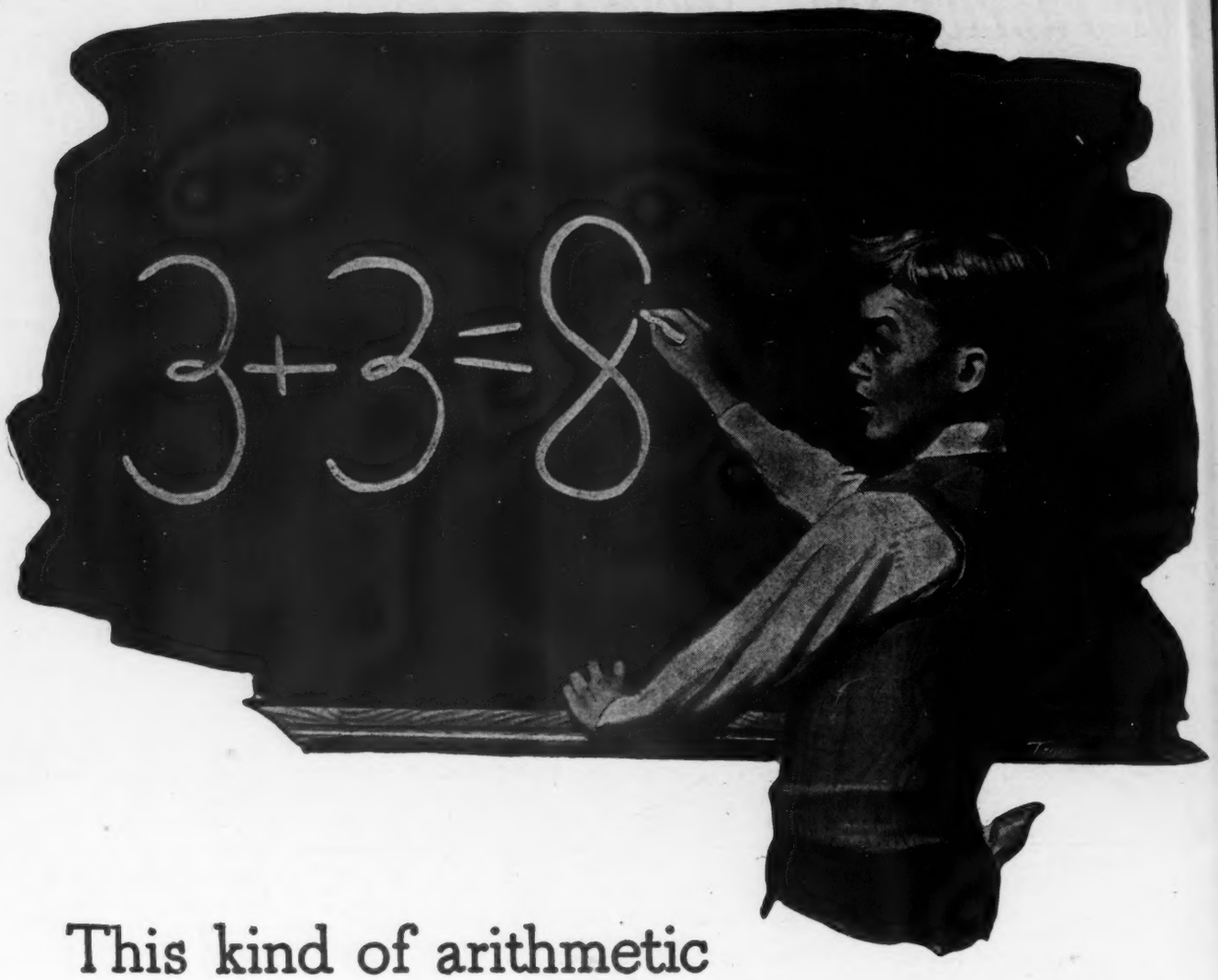

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You'll be mighty glad you did . . . 10 years from now!

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BRITISH TEXTILE MACHINERY

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A typical arrangement for Single Process Automatic Lap Forming Machinery

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Knitted Pile Fabrics

(*Continued from page 111*)

the taking-down mechanism keeps an even tension on the fabric to complete the course.

On some machines, the needles are slightly inclined to the radius, so that the sinkers follow a true circular path.

To obtain a design in color on this type of machine, the rotating sinker wheels must be regarded as pattern wheels, and special single-throated sinkers must be inserted where the pile yarn must not show. In this case, each feed has a different color pile yarn; and each pair of feeds makes one effective design course for two-color effects. For three-color designs, each group of three feeds would produce one effective design course. The design plotting for this type of mechanism is somewhat complicated, and much skill is required to overcome the obvious limitations.

Normally, pattern-wheel designs would be produced in spiral form; but by careful plotting of suitable designs, this effect can be almost eliminated, as described in Mr. Chamberlain's book, previously quoted. In one revolution of the machine, the pattern wheel has made x revolutions plus or minus one width of the pattern. The wheel selects each lateral row of the design; and, if the design is plotted out within a prescribed area, it must be built up longitudinally by means of row 2 coming over or under row 1, etc., until the pattern depth has been knitted. For example, in the case of a machine with 400 needles and a width factor of 40 wales, the formula

$$\text{Depth of Design} = \frac{\text{Needles in cylinder}}{\text{Width of Design in Wales}} \pm 1$$

Becomes —

$$\text{Depth} = \frac{400}{40} + 1 = 41$$

$$\text{Pattern Area} = 40 \times 41$$

or

$$\text{Depth} = \frac{400}{40} - 1 = 39$$

$$\text{Pattern Area} = 40 \times 39.$$

If the resulting pattern is studied, it will be noted that each vertical column contains the whole of the design; but taken horizontally the pattern strips fall one width to the right at each pattern repeat and thus form a slight spiral round the fabric.

A diagrammatic sketch showing the loop structure of this type of fabric is shown at Fig. 3. In this sketch, the pile loops are not cut, and the loops are distorted so that the complete fabric structure is visible.

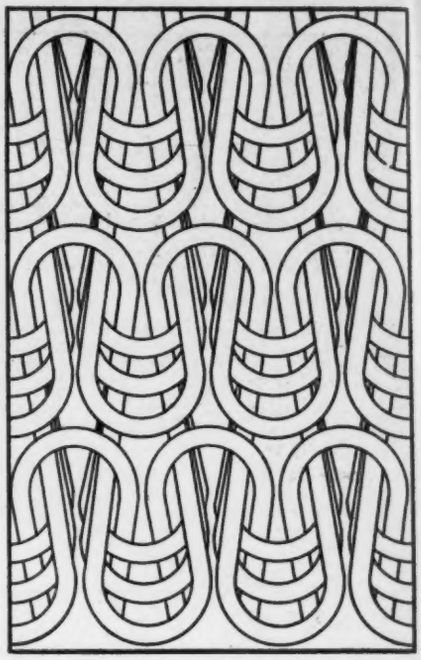

Fig. 3. Sketch of triple-pile fabric (pile loops not cut).

CIRCULAR LATCH-NEEDLE MACHINES. The loop-forming elements of this type of machine for producing plush fabrics are shown in Fig. 4. The jacks *f* and sinkers *d* and *e* are fitted in tricks in the sinker ring attached externally to the needle cylinder carrying needles a.

The latch needles a are vertical and free to slide in tricks cut in the needle cylinder. The movement of the needle is controlled by the clearing-stitch and upthrow cams during loop formation.

Sinkers *d* and *e* are situated in the same trick cut in the sinker ring and are free to move horizontally between the needles, controlled by the sinker cams. Sinker *d* is the normal web-holding sinker and is operated independently of sinker e. The function of sinker *d* is to hold the web down during clearing and so make the machine "self-starting." Sinker e is the pile-forming sinker and is selected to be thrust forward early so that the pile thread is fed over its upper surface. It is then withdrawn at knock-over point when the web-holding sinker takes control of the knitting. The pile-forming sinker e is selected to be thrust forward when required through jack *f*, which is in turn actuated through levers g by pattern drum *h*. If triple plush is required, an extra-high throat is added to sinker e.

The designs produced by this method are non-spiral. By careful designing and arrangement of the patterning elements, attractive patterns can be produced.

WARP-KNITTING MACHINES. Pile fabrics made by warp-knitting machines

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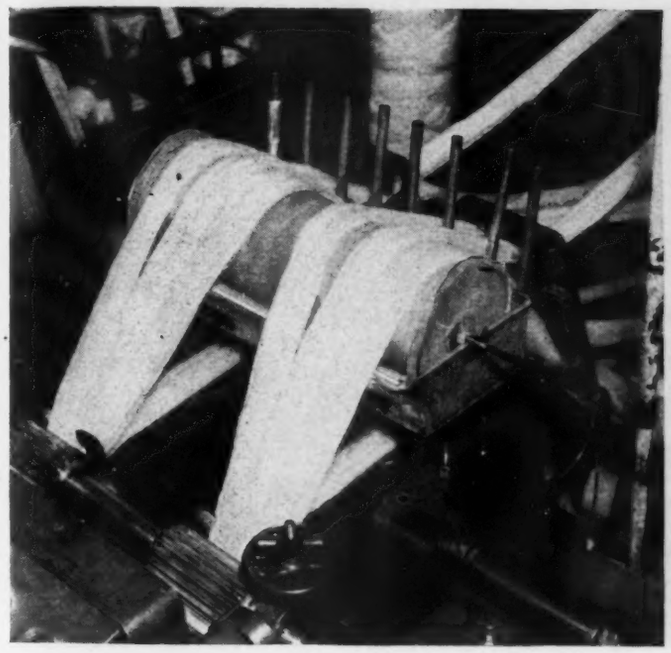

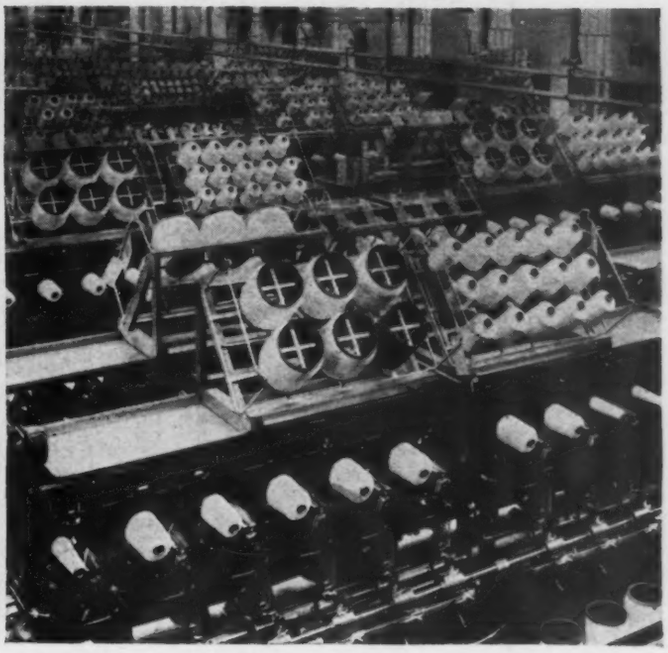

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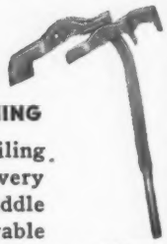

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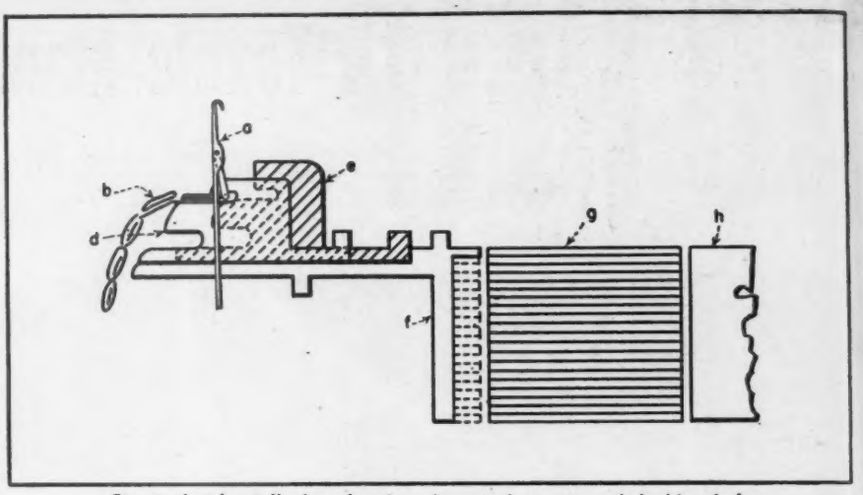


Fig. 4. Latch-needle loop-forming elements for patterned double plush.

are produced by "fall-plate" loops. The fall plate descends to place the loops of certain yarns below the latches. As the pile threads never get in the needle hooks, very thick and full threads may be used. The pile loops are made by looping the threads around knives which cut them after they have been knitted in. Very elaborate effects are produced by using a jacquard mechanism which selects individual warp ends.

This method of producing pile fabrics is much slower than is the case with filling-knitting; but loftier, fuller, stronger, and thicker pile threads can be used; and, with a jacquard mechanism, extensive patterns can be produced.

The three methods briefly described are not exhaustive, and other methods are available for producing knitted pile fabrics. However, these will serve as a satisfactory introduction for those who wish to study pile-knitting technology.

Machine Napping

(*Continued from page 125*)

be carefully adjusted, because accuracy of setting is important.

Behind the cylinder there is a wire brush, known as a "laying brush," which straightens or lays the nap and is of special value on face-finished goods. The degree of contact against the fabric for the napping rolls can be adjusted by means of a hand wheel. Adjustment can be made to give a light or heavy raising of the fibers. Generally it is best to start lightly, with very little pressure, and to increase the contact on additional runs. Contact may be made with 3, 6, or 9 rolls, depending on the finish desired.

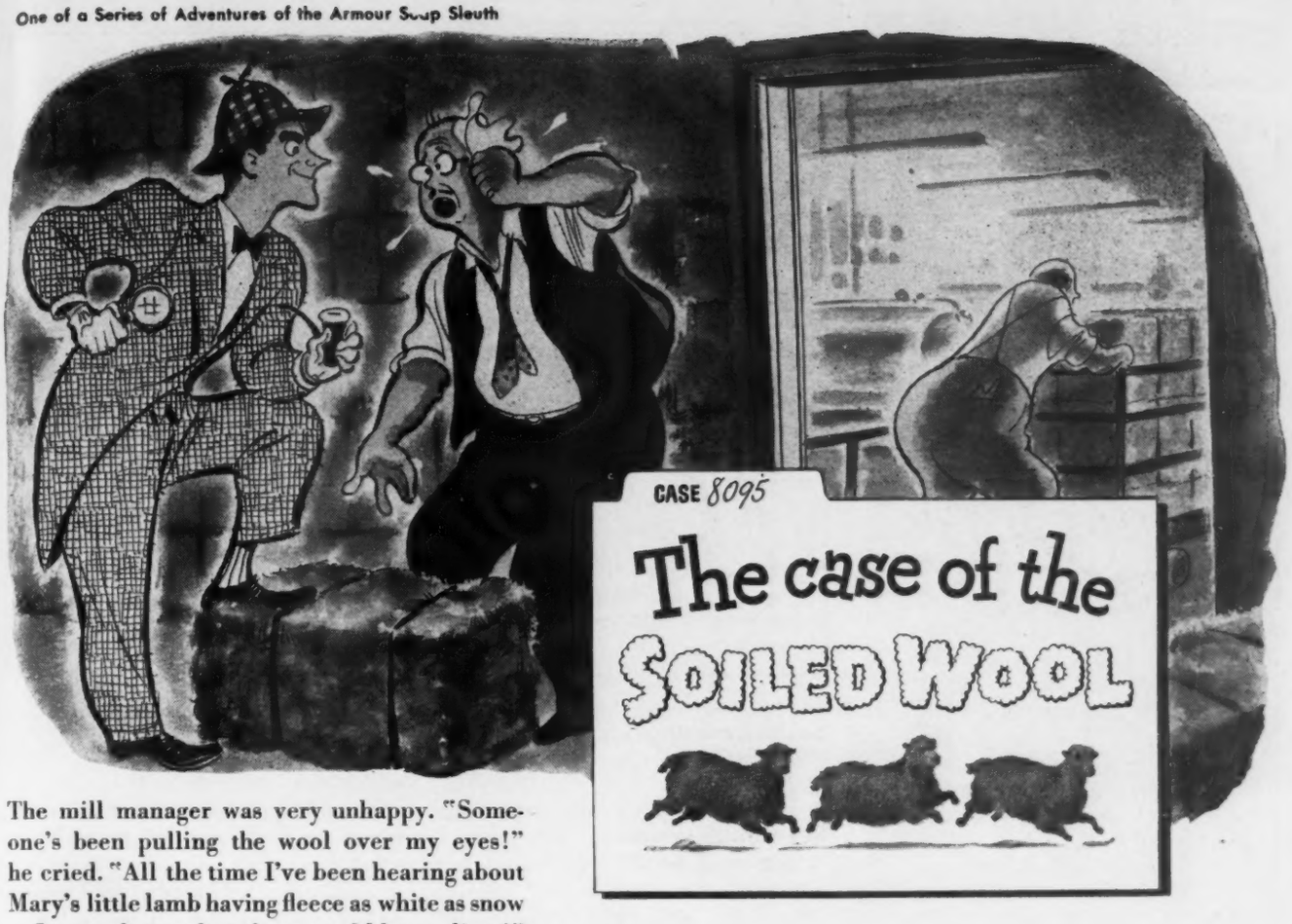
It is essential that the wire on the rolls be kept in good condition. The wire ends must be needle-sharp in order to pass through the matted surface of the fabric with little resistance. Dull or blunt wire points will cause excessive waste and poor nap. Sometimes a fabric shows a better nap on each side than in the center, caused by the fact that the wire rolls dull more quickly in the center than on the ends. Dull or blunted rolls should be removed and sharpened in a special machine for this purpose. The length of time between sharpenings depends on the amount of use and the type of fabric napped.

DOUBLE-ACTION MACHINES. Double-acting napper, illustrated in Fig. 2, raises the fibers from the cloth first one way and then the other, producing a nap which stands erect. A soft, thick nap is given according to the number of runs over the machine. The double-acting napper is made with one set of rolls running in one direction, known as pile, and another set of rolls running in the opposite direction, known as counter pile. These rolls are set in the machine alternately, one pile and one counter pile. The pile rolls are covered with angular fillet, the points of which face toward the back of the machine. The counter-pile rolls, also covered with angular fillet, have the points facing the front of the machine. These rolls, working on the cloth in conjunction with one another, produce a short, thick, felty nap. This type of machine is suitable for blankets, overcoatings, uniform cloths, undressed worsteds, and napped rayons.

Two strippers, or time clearers, are used on double-acting nappers, whereas only one is used on the single-action machines. They are located under the main cylinder and their function is to clean the worker rolls.

In setting the time clearers on double-action nappers (Fig. 3), the front one is timed to clean the counter-pile rolls and the back clearer is adjusted to clean the pile rolls. Great care is necessary in the setting

One of a Series of Adventures of the Armour Soap Sleuth



The mill manager was very unhappy. "Someone's been pulling the wool over my eyes!" he cried. "All the time I've been hearing about Mary's little lamb having fleece as white as snow —I never knew that sheep could be so dirty!"

He looked sadly at the wool around him. "This wool-scouring operation of ours is *supposed* to clean up the fibres, leave our wool soft and resilient for the blending and carding."

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"You see, Texscour, a red oil base soap in flake form, has a low titer of 8-12 °C. Texscour gives quick, lasting suds—and lots of them! Texscour cuts grease, knocks out all soil and foreign material quickly, rinses out at once in warm water. You get a *better, cleaner* scour . . . and delicate wool fibres stay soft and resilient! Incidentally, Texscour is only one of the soaps Armour makes for the textile industry. Give me a ring if you need any help." With that the Sleuth grabbed his trusty glass and was off to solve another textile problem.

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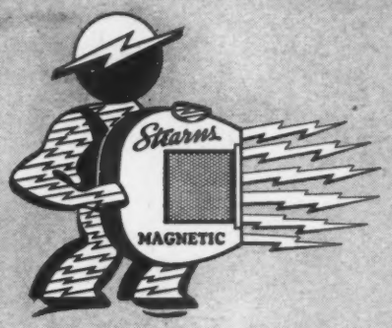

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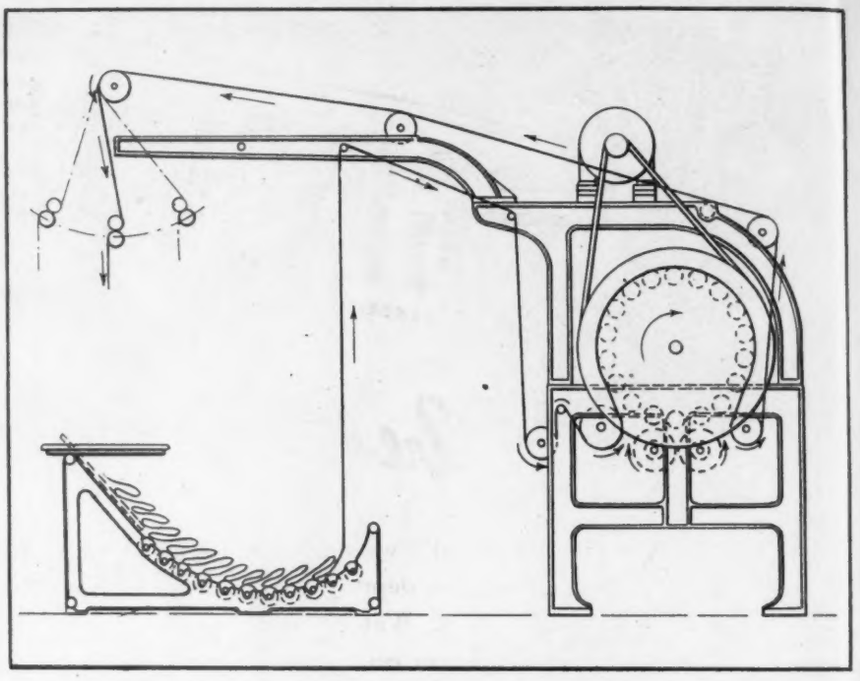

Fig. 2. Double-acting nappers utilize two sets of workers, running in opposite directions, to produce a straight-up pile.

of the clearers because a slight error will spoil the clothing. One method of setting these is by lining up the centers of the front-clearer shaft, the counter-pile worker-roll shaft, and the main shaft into a straight line when either strip of time-clearer clothing is in position to clean the counter-pile worker. When this position is found, the clearer is lowered or raised so that a No. 34 card gage fits snugly between the clearer wire and the worker wire. The wire on the worker roll will be kept clean and in condition. The back time clearer is set in the same manner by lining it up with the main shaft and the pile-worker shaft. The clearer should be in position to clean the pile worker.

ENERGY CONTROL. Energy control is regulated by means of two sets of cone pulleys, conveniently located for adjustment while the napper is in operation. On all nappers, it is essential to know the adjustments that will give the neutral point in napping. The 24-roll napper is furnished with change gears for energy regulation. The neutral point is obtained with the installation of a 24-tooth gear on the front bottom-cone shaft and a 48-tooth gear on the back of the bottom-cone shaft. The front-cone pulleys control the counter-pile rolls, while the back-cone pulleys control the pile rolls.

Knit-goods nappers are made for producing fleece linings, stockinets, robes, and eiderdowns, where a very thick, even nap is desired. The napping is done in the open web, or piece. Generally, only one run through the machine is necessary, since the goods are acted upon twice by the cylinder in the one operation.

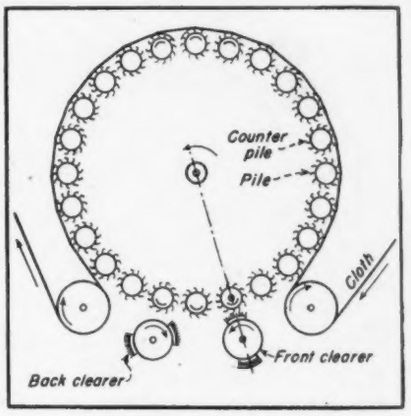

Fig. 3. Setting front clearer is accomplished by lining up shafts of cylinder, worker, and clearer, with clearer in position to clean counterpile worker wire.

Shaw Long Draft . . . . . .

(Continued on page 131)

type long draft. The large roll and the guide bar are so set with relation to each other that the fibers are gripped most tightly where the apron first contacts the top roll. The fibers are gradually released as they move toward the nip of the front rolls. The large middle roll is equipped with collars which work against the cap-bars and keep the

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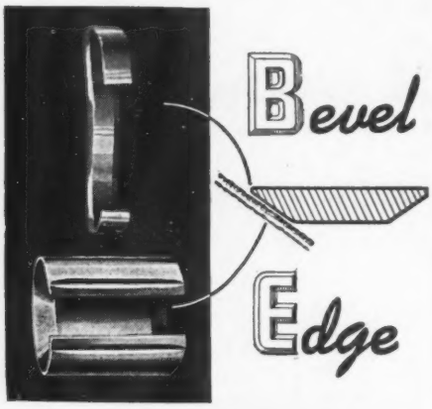

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1. Less loading up of travelers on cotton
2. Less fly waste on woolen.
3. Minimizes split ends on rayon, and silk.
4. Much lower end breakage—frequently 8 to 10 fewer per hour.
5. More uniform tension—more uniform yarn.

Note: Selection of the correct size and weight, in which our men assist, is extremely important to assure MAXIMUM result.

U. S. Travelers are made and stocked in ALL styles.

DEPENDABLE DELIVERY—
PROMPT SERVICE CALLS

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AMOS M. BOWEN, President & Treasurer
Providence, Rhode Island

"U. S." Men give you Prompt Service!

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M. L. BOLTON—West Philadelphia—Box 7234—Trinity 1438
H. R. FISHER—Concord, N. C.—Box 83—Phone 8988
C. W. SMITH—H. J. SMITH—L. H. MELLOR, Jr., Providence—Gaspee 0100

setting between middle top roll and apron-strap constant.

Although drafts up to 50 have been obtained with the Shaw system, a difficulty at first encountered with getting higher drafts than 35 was that the spread of the fibers on the front roll became wider with each increase in draft, which caused excessive fly and waste accumulations on clearers and thread boards. The difficulty has been overcome by using as a condenser a small, open-top plastic trumpet which is mounted on spring clips and fastened to a traverse bar. This bar, in turn, is coupled to the mechanism which reciprocates the back trumpet bar, so that both condensers and trumpets travel in unison and are always aligned. The condenser is said to eliminate most of the lap-ups and yet, being mounted on a spring, is not damaged by small chokes or roller laps.

At a meeting of the Southern Textile Association (TEXTILE WORLD, April, 1944), E. C. Gwaltney explained the Shaw system to mill executives and demonstrated a table model.

ADVANTAGES. From the standpoint of the China Grove mill, the chief advantage from the Shaw system of spinning accrues in the card room, where only four rovings are made in the place of as many as 12 formerly run. Another advantage is the flexibility with which numbers and drafts may be changed. This makes operation much cheaper and simpler than before because as many as six different cottons are used. Hank rovings are now 1.30 and 2.00 on a 10 x 5 Saco-Lowell J-3 slubber, doubled respectively to a 4.00 h.r. on a 7 x 3½ roving frame, and a 6.50 h.r. on an 8 x 3½ frame.

Carding is done at 7 lb. per hr., making a 45-gr. sliver, while combers run 13 lb. per hr., making a 50-gr. sliver.

No. 2 mill on coarse and medium numbers, 10s to 50s, does not use the Shaw system, as with drafts of 11 to 15 no great advantage would accrue.

One advantage of the Shaw system made use of at this plant is the wide range of yarn numbers that can be spun from the two hank rovings (4.00 and 6.50). On 4.00-hank alone, 70s can be made of 1 7/16-in. stock with a draft of 35; and 40s, of 1 1/16-in. stock, with a draft of 20. Break drafts can be changed to get different over-all drafts without changing roll settings to suit staple. The setting between the front and middle roll is not changed, once it is properly made.

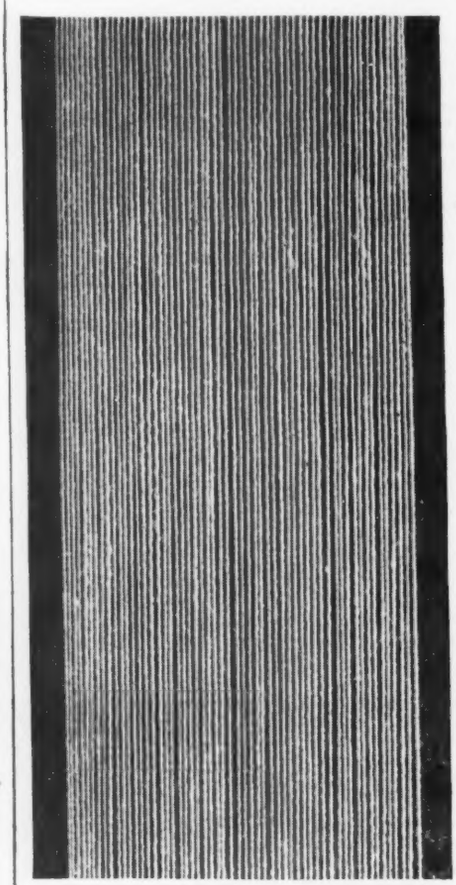

Fig. 2. Sample yarn spun on the Shaw system, showing exceptional quality of a 40/2 hosiery yarn.

QUALITY AND CONTROL. Quality is stressed in operations at China Grove, and the close control maintained over the product has helped to make a success of the Shaw frame. The opener room has two batteries of F-7 blending and feeding units and plenty of floor space for putting down mixes to feed to plants Nos. 1 and 2. Cotton is selected with the greatest care by an employee of the mill, who is responsible for getting the best. Sak and American cottons in six grades are used, with staple lengths of 1 1/16 in. and above.

From the opener room, the cotton is piped to bins and taken by hand to one-process pickers. Later, when equipment is available, the bins will be eliminated and the cotton fed automatically to the pickers. Laps are put on lap trucks immediately and not placed on end on the floor, as the weight of the lap causes a heavy end which makes uneven carding.

Cards and combers are maintained in excellent mechanical condition. The card room has carefully controlled humidities, with 48% for the cards and 50% for the combers in the same room, using Bahnson air-conditioning equipment. On the J-3 slubber, the front roll is leather; and the middle and back are Accotex.

Control of weights and settings are a major factor in the operation of the card room. This control makes possible such yarn as is shown in Fig. 2. A major factor in this control is the air-

SQUARE CUT

Thread

from

LIQUID LATEX

It's the Better Thread because it's —

1. Made from Liquid Latex
2. Formed with three plies
3. A square cut thread
4. Longer Lengths
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Now in Production in Our New, Modern Plant

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ANDREWS-ALDERFER PROCESSING COMPANY

120 ASH STREET
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For speed control at its best

Look to...

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Variable **SPEED CONTROL**

TRANSMISSIONS • MOTOR PULLEYS

★ The adaptation of modern, highly-efficient control of your production machines requires the work of specialists. The experience of this organization—pioneers in speed control—is available to you for the solution of your speed-control problems.

Lewellen Variable-Speed Transmissions, Variable-Speed Motor Pulleys and Automatic Controls serve industry the country over. Lewellen engineers are constantly finding new ways to adapt variable-speed control to fixed-speed machines and to improve inefficient speed-control methods.

We invite you to use this specialized service. Tell us your problem! Look to Lewellen!

LEWELLEN MANUFACTURING CO.
COLUMBUS, INDIANA

"The
AIR-PERME-ATOR
saved me
$5,000
in one year"

A man was getting rayon tow from a yarn house, billed to him as containing 11% of moisture. After he had handled it, the moisture content was only 8%. *He lost 3% of weight on every shipment,* until he installed Air-Perme-Ator. One single Air-Perme-Ator in his carding shed humidified 86,000 cubic feet of space and *restored the 3% of moisture previously lost.*

$5,000 saved in one year in this way paid for the entire Air-Perme-Ator installation in a few months, leaving a handsome margin of profit—and continued thereafter to save the whole sum each year.

●

The Air-Perme-Ator maintains even humidity. It is easy to install. It can be hooked up to any lighting circuit and existing water line. No expensive central system is required.

No free moisture is sprayed into the air by the Air-Perme-Ator. It operates on the principle of molecular suspension of moisture—nature's process of humidification — 500 times finer than spray.

The Air-Perme-Ator has been installed by many leading mills in carding room, loom sheds, winding departments, etc.

●

Write for report 200 "Regain through controlled humidity".

AIR-PERME-ATOR
MFG. CO.
300 Preakness Avenue, Paterson 2, N. J.

conditioned laboratory equipped with a complete range of testing machines and operated by two girls. Here, the humidity and temperature are kept standard the year around by the Bahnson equipment, designed to cool the laboratory in summer or heat it in winter.

In the spinning room, the combed yarn is spun under conditions that help make good yarn. Spinners are assigned sides in keeping with quality requirements, and roll-stripping is done by other hands in order to maintain quality. Clean rolls and clean frames are especially important on combed yarns, as yarns with slubs are not first quality. The Shaw frames have the usual complement of clearers—top, scavenger roll, and back bottom. The first two are more or less conventional. The back-bottom under-clearer is of the revolving "Lane" type, which has flat sections alternating with curved sections. This clearer is free of any bumping action and will store a lot of waste or fly before requiring stripping.

Another factor in securing high-quality yarn at China Grove is the roller-covering shop, where all rolls are covered for both Mills No. 1 and No. 2. A high grade of chrome-tanned leather developed for this company by A. C. Lawrence Leather Co. is employed; and particular care is taken to make the joint on the leather roll without a ridge.

Spindle speeds are uniform for all Shaw spinning frames at China Grove, and the cylinders and motors are directly coupled. Front-roll speeds are somewhat above the normal speeds listed for regular long-draft frames, but the increase causes no loss in quality.

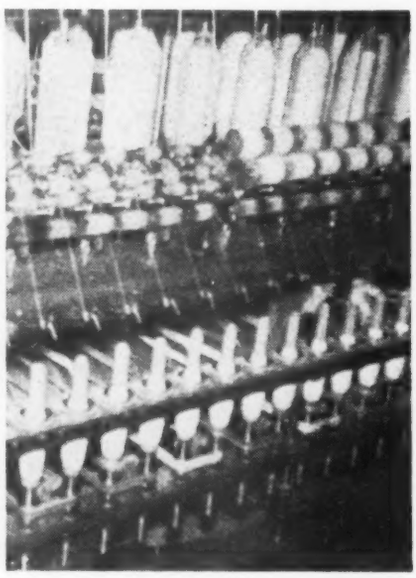

Fig. 3. Shaw spinning frame during development at China Grove, with clearers removed in left-hand portion.

Supervisor Training

(*Continued from page 113*)

young boys, although in an unofficial capacity.

The overseer had recently been changed in the department, and the present supervisor was a new man, unfamiliar with the employee's activity as well as with the company's policy of paying employees who act in instructor roles an extra 5¢ per hr.

The employee asked the new supervisor for the back money which the company owed him. (No record had been made of the employee's training activities, and thus he was not classified as an employee with instructor duties.) The new supervisor turned the employee down on his request. The employee was very much upset, and as a result department morale fell to a critical point, since the employee was highly regarded by all the workers.

Seeing the result of his action, the new supervisor suggested that the employee take a few days off and that meanwhile he would check with the general office and find out about the company policy, as well as obtain the instructor payments due him if this was possible. The company paid the employee for his effort, which had been voluntary and had not been reported by the previous supervisor.

The training class commented that the old supervisor did not sit down with the new man and go over the status of the employees. Had this been done, or had the employee been properly classified in the first place, the problem would not have arisen. It was suggested that company policy should cover such precautions, particularly when almost two weeks' production from this department had been critically affected.

PROBLEM VI.

The employee was 30 years old, married, and had been hired as an electrician. By unsafe practices, he had burnt up screw drivers and switches while working on electric fixtures in the mill. The master mechanic talked with the employee and found that the employee's supervisor had also talked with the employee several times about the same unsafe practice. The master mechanic told the electrician to observe safety rules or he would be fired.

The comments by the training class were that the electrician's immediate supervisor had been too lenient and that the employee should have been discharged for violating repeatedly the warnings given him.

BATTERY OF HIGH-VELOCITY, AXIAL FLOW FANS IN MODEL E PIECE GOODS DRYER

ANOTHER REASON FOR NATIONAL'S *Faster, More Uniform Drying*

Generation of the maximum volume of air per unit horsepower and the uniform circulation of this air through and over the material is of the utmost importance in obtaining the greatest efficiency from the drying medium. This is accomplished in "National" Model E Automatic Piece Goods Dryers by use of specially designed and patented high-velocity fans in suitable number and properly located.

These fans are of aluminum, with adjustable pitch blades and direct motor drive. Their shaft bearings are precision anti-friction type, and are automatically oil lubricated from a reservoir located outside the dryer, eliminating greasing operations. Fans are located in a separate compartment, which may be on either side of the machine, with doors at both ends for easy accessibility.

★ ★ ★

Other features that contribute to faster, more uniform drying in "National" Model E Automatic Piece Goods Dryers are the patented Revolving-Expanding Conveyor Poles; controlled air diffusion; increased radiation surface; minimum air flow resistance; and higher operating speeds. *Write for complete information.*

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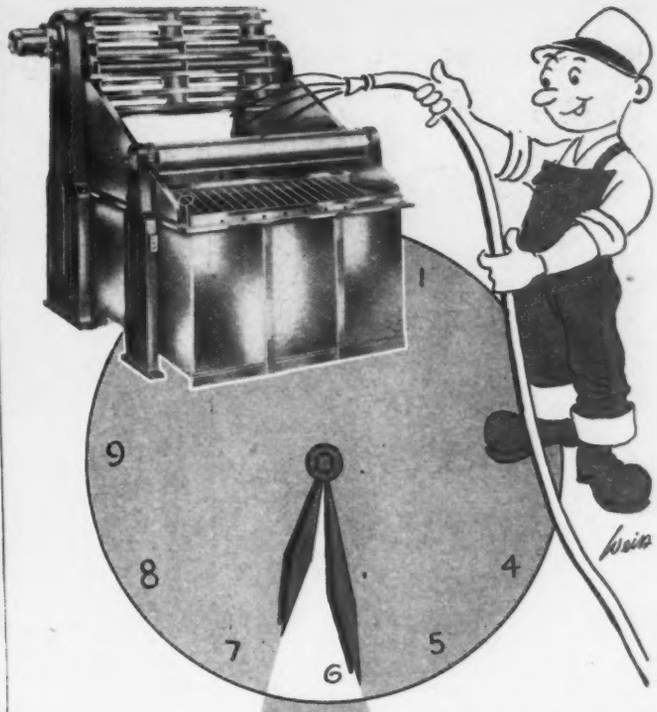

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The Blickman Stainless Steel dyebox gives you more runs per day at lower cost. A quick rinse and the box is clean. In man-hour savings alone, many operators report that the equipment pays for itself in a short time. Send for all the facts.

Send for folder "3 for 5"—showing Blickman Stainless Steel Dyeing Equipment.

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Manufacturers of stainless steel textile equipment, dye boxes, linings, cylinders, dry cans, rolls, hoods, tanks

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LOWEST COST FOR OPERATION AND MAINTENANCE

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News of the month

On Decontrol. Dr. W. P. Jacobs, president of American Cotton Manufacturers' Association, has received word from Geoffrey Baker, Deputy OPA Administrator, that the OPA would not decontrol any product until a balance existed between supply and demand. Dr. Jacobs said that if this policy were followed literally in the case of cotton waste that cotton-textile ceilings would have to be continued indefinitely.

Research Meeting. "Production Progress Through Textile Research," is the overall theme for the seventeenth annual meeting of the Textile Research Institute at the Waldorf-Astoria, New York, Nov. 8. The practical uses of research in the textile industry will be brought out through short talks, visual working models, and exhibits. Each feature will include information and facts of interest to both research men and mill men. The exhibits committee is chairmaned by Ephraim Freedman, of R. H. Macy & Co.

LOOKS LIKE A TEXTILE—but it's not. Above is shown an apron of vinylite plastic film with design printed upon its surface. It is resistant to water and greases, and can be wiped clean easily with a damp cloth. The apron is manufactured by Plymouth Rubber Co., Canton, Mass., and photo is from Bakelite Corp.

Textile Calendar

AATCC, New York Section, Swiss Chalet, Rochelle Park, N. J., Oct. 18, 1946.

Thread Institute, annual meeting, Waldorf-Astoria, New York, Oct. 22, 1946.

Cotton-Textile Institute, 20th annual meeting, Waldorf-Astoria, New York, Oct. 23 and 24, 1946.

AATCC, Piedmont Section, Charlotte, N. C., Oct. 26, 1946.

Canadian Woolen & Knit Goods Manufacturers Association, annual meeting, Mount Royal Hotel, Montreal, Canada, Oct. 29 and 30, 1946.

Textile Research Institute, 17th annual meeting, Waldorf-Astoria, New York, Nov. 8, 1946.

Seventeenth National Exposition of Power & Mechanical Engineering, Grand Central Palace, New York, Dec. 2 to 7, 1946.

AATCC, Silver Jubilee Convention, Hotel Statler, Boston, Mass., Dec. 12 to 14, 1946.

National Cotton Council, annual convention, Galveston, Tex., Jan. 27 to 29, 1947.

Seventh International Heating & Ventilating Exposition, Lakeside Hall, Cleveland, Ohio, Jan. 27 to 31, 1947.

ASTM spring meeting, Philadelphia, Feb. 24 to 28, 1947.

Knitting Arts Exhibition, Convention Hall, Atlantic City, N. J., Apr. 29 to May 2, 1947.

National Association of Hosiery Manufacturers, annual meeting, Hotel Claridge, Atlantic City, N. J., Apr. 28, 1947.

Hosiery Industry Conference, Hotel Claridge, Atlantic City, N. J., Apr. 28 and 29, 1947.

Second National Plastic Exposition, Coliseum, Chicago, May 5 to 11, 1947.

ASTM, annual meeting, Atlantic City, N. J., June 16 to 20, 1947.

Combed Spinners Meet. Need for research was stressed by M. E. Heard of West Point Mfg. Co., West Point, Ga., in an address before the annual convention of the Southern Combed Yarn Spinners Association at Cherryville, N. C., Sept. 27. Dr. C. T. Murchison, president of Cotton-Textile Institute, warned against any tendency to withhold goods. Ed Liscomb, of National Cotton Council, stressed the need for better quality at lower cost. A. C. Lineberger, president of Piedmont Processing Co., Belmont, N. C., was elected president of the association for the new year, succeeding C. C. Dawson. H. E. Rietz was reelected executive secretary.

Botany's Merchandising. Beginning with the spring 1947 season, Botany Worsted Mills will confine all of its fabrics for women's wear to a selected group of 24 apparel producers located in the chief fashion-producing areas of the country. The selected group represents a cross section of manufacturers specializing in women's, misses', children's, and infant's clothing, producing a complete range of non-competitive lines, each one of which is already nationally distributed under established brand names. The program of selective, restricted distribu-

KILLS PLANT MAINTENANCE ENEMIES

LIQUID PORCELAIN-LIKE

DAMP-TEX

Damp-Tex super-enamel can be applied to surfaces despite moisture, heat, fumes and many other extreme conditons. Its water-proof film retards deterioration, increases efficiency, turns depressing, dingy interiors into gleaming, porcelain-smooth beauty. Resistant to fungus, 2% caustic solution, steam and lactic acid. One coat covers. Comes in white and colors. Used in over 4000 plants. Write for our trial offer.

Proved Fungus Resistant by FUNGUS TEST

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DAMP-TEX FOR WET OR DRY SURFACES

STEELCOTE MFG. CO. • ST. LOUIS, MO.

Canadian Manufacturer—Standard Paint & Varnish Co., Windsor, Canada

"NO SMUDGING *in our textile printing"*

"CARBOMATIC" INFRA-RED BURNERS HOUSED IN BOX

BY USE OF

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INFRA-RED RADIANT HEAT

Dryers

• "Smudging is prevented—before the goods reach the first roll," comes the unvarying reports from all mills where the textile printing presses are equipped with Carbomatic Infra-Red drying units.

Moreover, the color fastness is improved, crocking avoided, and production increased by use of Carbomatic Infra-Red. Any desired temperature is maintained. Carbomatic complete drying units eliminate need for steam. Operation throughout is fully automatic.

Carbomatic Infra-Red is setting up new efficiency records in every type of heating application found in textile mills!

Write for informative Bulletin TW-10

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IN CANADA
Canadian Textile Engrg. Ltd.
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cannot deceive you if you have the proper

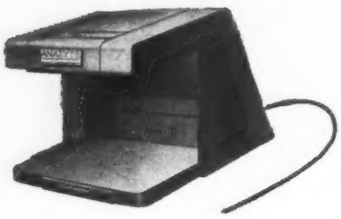
LIGHT SOURCE

for color matching

In the exact matching of colors, where errors of the tiniest degree are costly, even the trained eyes of skilled experts may fail if the light source is not comparable with true north light. Hence the need of the new

ANALYTE

NORTH LIGHT COMPARATOR



The Analyte Color Comparator provides color matching stepped up to highest definitions. It gives the nearest reproduction of true north light. Analyte reproduces true color matching light at any time, day or night, all seasons of the year, regardless of weather conditions.

A compact unit measuring 20x20x15 inches, weighing 120 pounds, and operating on 115 volt A. C. current.

We invite your request for further information, or demonstration.

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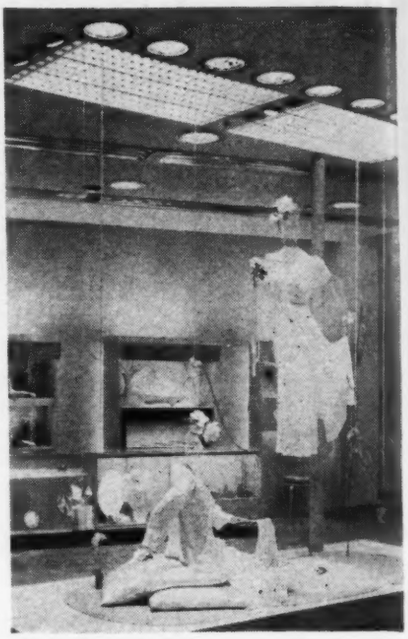
tion of its fabrics for women's wear was characterized by Col. C. F. H. Johnson, Botany president, as the final phase of a policy which has been in process of development and completion for the last 15 years. At the present time, Botany either manufactures independently, or through a selected group of franchised producers, men's neckwear, bathrobes, hosiery, sportswear, knitting yarns, retail piece goods, and lanolin cosmetics. The "Botany 500" clothing, now distributed to 1,153 retail accounts, with a planned production of one million units for 1947, is manufactured exclusively by H. Daroff & Sons, Inc., of Philadelphia.

German Textile Output.—BERLIN (*McGraw-Hill World News*)—AMG announced following figures of production in American Zone of Germany during month of June: Cotton yarn, 1,860 tons; staple fiber, 704 tons; linen yarn, 52 tons; filament rayon, 196 tons. The 10,000 tons of cotton imported from the United States is being used at an increasing rate by Germany and another 50,000 tons has been contracted for. When the finished goods are exported, the original imports will be paid for in currencies obtained by the exports, and the balance of finished goods remaining after enough have been exported to pay for the raw materials will be available to the German population in the zone.

Raw Silk Now Auctioned. On Sept. 18 the first open auction of Japanese raw silk was held in New York. . There were minimum prices set by USCC but all but 120 bales of the 5,019 bales offered were sold. Prices ranged from $6.40 to $13.50. Prices were par to 25% above upset prices. Silk dealers were important buyers. Some silk was sold to European interests. Another sale was set for Oct. 14 on a similar auction basis which the trade evidently prefers to the previous sealed-bid method.



***ARTIFICIAL LIGHT** that not only possesses all of the beneficial rays of sunlight but does a better job of illumination by maintaining proper light-density under all conditions, was one of the many features of General Electric Co.'s show at the reopening of that company's completely rebuilt lighting institute at Nela Park, Cleveland, on Sept. 11. Nela Park had been closed during the war years. Maintained as an educational institute on lighting, it is equipped with a series of displays and model installations, industrial, domestic, and for display. The fluorescent-incandescent combination shown above is of the last named group.*

Dept. of Commerce Offers Technical Services. An industrial research program, an inventors' advisory service, a technical information service, and the continued gathering and dissemination of technical information from enemy countries are among the duties of the recently-organized Office of Technical

"COTTON FRESHNESS" is the keynote of the first postwar work-clothing promotion campaign by the National Cotton Council. A car-card for display in October and November has been distributed, which will be seen by 305,000,000 persons each month, who are car and bus riders in 236 cities. The card, as shown above, is one of a series. Studies by the Advertising Research Foundation indicate that 23% of the total population above the age of 15 in a given trade area read such advertisements.

LUBRICATION COSTS GO DOWN WITH NON-FLUID OIL

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● When your machines are stopped does your present lubricant drain away?

When your machines are operating does your lubricant seek and remain at the point of friction?

Your lubricating costs will go down with NON-FLUID OIL because it "stays put" until entirely used up and does not drain away from bearings when machinery is stopped. NON-FLUID OIL also eliminates costly spoilage loss of goods because it avoids the dripping and slinging of oil—providing positive lubrication upon split-second demand.

Write today for your copy of our latest bulletin on lubrication of textile machinery.

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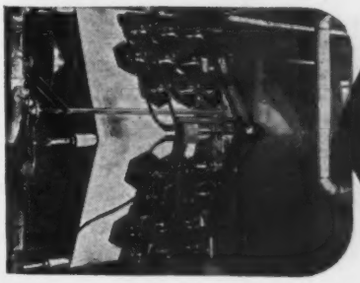
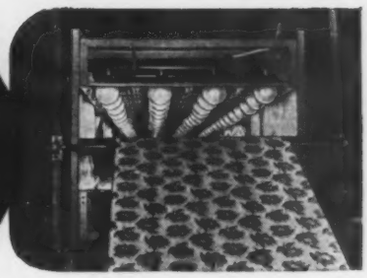


30% to 40% in preshrinking cloth

UP to 50% in drying printed textiles



Photos courtesy Fostoria Pressed Steel Corporation, Manufacturers of Infra-Red Equipment

Typical results with *INFRA-RED*

In application after application in the textile industry—*wherever* drying, preheating or evaporation is involved—Infra-Red is scoring outstanding production gains.

Output is boosted, costs reduced, or rejects cut down in preshrinking cloth; drying rayons, cellulose acetate, printed fabrics; removing salt solution from duck.

FOR BEST RESULTS WITH INFRA-RED

come to the company that's first in the field of Infra-Red Lamps. Wabash developed the special lamp filament that provides *uniform* distribution of radiant energy—at the best wave lengths for the purpose. Wabash locks every lamp with the famous "Superlok" base that even terrific temperatures cannot loosen.

And Wabash is ready to help you engineer each job. *Wabash Corporation, 345 Carroll Street, Brooklyn 31, New York.*

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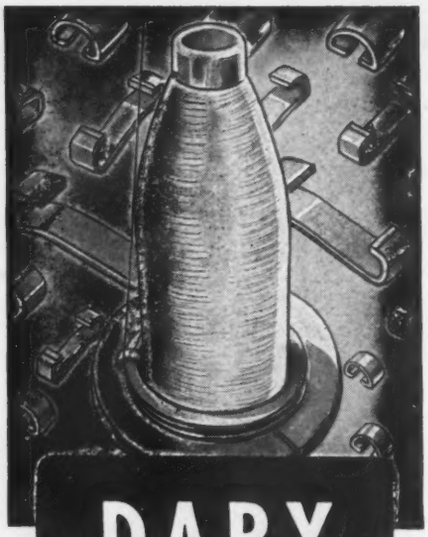
FIRST IN INFRA-RED
SYLVANIA ELECTRIC

Wabash Corporation, a subsidiary of Sylvania Electric Products Inc.



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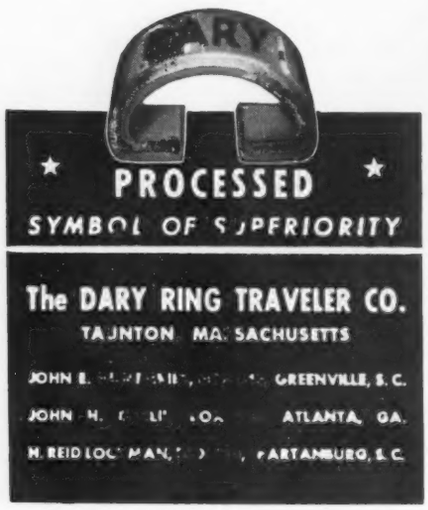
Increased spindle speed and maximum traveler wear are two prominent advantages of Dary Ring Travelers.

In every spinning and twisting task, with any type or count yarn, superior products result from superior operation with superior Dary Ring Travelers.

The friendly Dary Representative in your area is always at your service. Call him at any time.

Go Dary today!



Services of the Department of Commerce, Washington, D. C. John C. Green, who has been executive secretary of the Office of the Publication Board and chief engineer of the National Inventors Council, is director of OTS.

Australian Wools Up 10 to 15%. Cabled reports from Australia that the initial offerings of wool at the first auction held since the outbreak of the war brought prices 10 to 15% higher than the issue export prices of 1945 aroused deep interest, and some concern, among wool buyers and manufacturers, according to the American Wool Council. If this trend of prices continues, wool manufacturers may face an acute shortage of the fine wools while OPA retains its present inflexible price control.

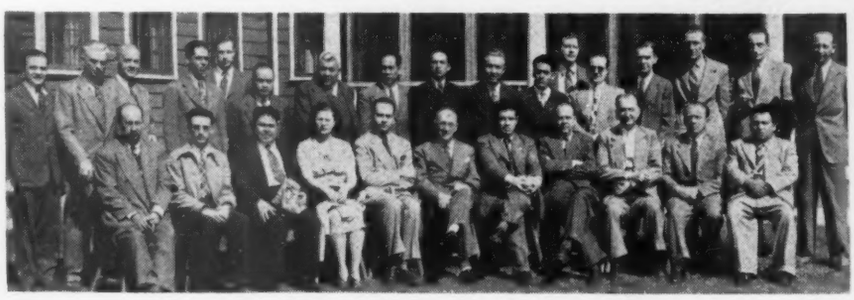
Cotton Survey Under Way. Another phase in the most ambitious fact-finding investigation ever undertaken on cotton was begun Sept. 18 in Washington, D. C., when a small group of specialists started a three-day conference on the "Competitive Position of Cotton in Its End Uses." The meeting, part of an all-inclusive study of the entire cotton picture from the soil to the consumer, is to consolidate information gained by one of ten steering committees engaged in "The Fact-finding Program on Agricultural and Economic Problems of the Cotton Belt."

Chattanooga Yarn Outing. Chattanooga Yarn Association held its 21st annual outing at Lookout Mountain, Tenn., on Sept. 19 and 20. Over 300 attended and 145 played in the golf tournament. C. Ralph Ewing, of Central Franklin Process Co., and president of the association, won the two-day handicap 36-hole tourney. H. T. Bryan, Jr. of Bryan Full Fashioned Hosiery Mills, had second low net score. Low gross score was turned in by J. E. Woolen, of Burlington Mills, Charlotte, N. C.

Fashion Exposition Next June. The International Exposition for Fashion Manufacturers will be held at Grand Central Palace, New York, June 2 to 7, 1947. Domestic and imported textiles will be featured, together with trimmings and accessories and factory equipment for manufacture of women's apparel.

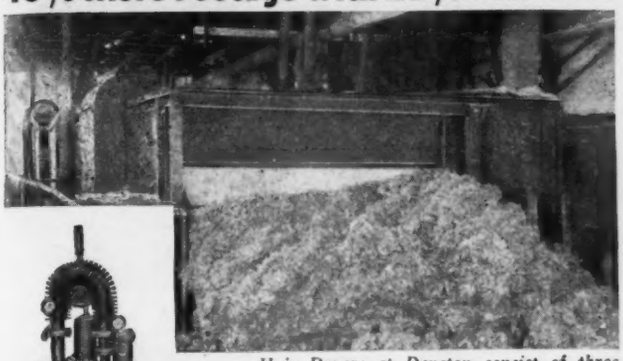
St. Marys 100 Years Old. St. Marys Woolen Mfg. Co., St. Marys, Ohio, is celebrating a double birthday this fall. As a corporation it will be 75 years old, but as an enterprise it goes back an even 100 years to the leasing of a water power and the starting of a small wool-spinning plant in 1846. William L. Ross, the founder of this business, installed a few looms in 1853. In 1871 a group of local business men took over, with Philip V. Herzing as president. The current president, Philip H. Herzing is his grandson.

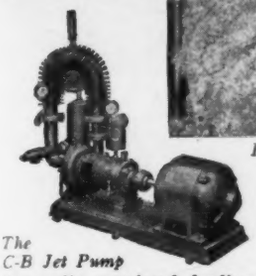
Barre Gives Service Pins. Sixty-one "oldtimers" received pins at the annual service award party of The Barre Wool Combing Co., Ltd., South Barre, Mass., Sept. 7. The pins represent from 15 to 40 years of continuous service with the company. Levon M. Yacubian, manager of the company, officiated at the presentation ceremonies. Rosario Puliafico, with 40 years, tops the employee service record. An outing and picnic were also held.



MEXICAN TEXTILE EXPERTS—Members of Mexican Textile Mission, whose coming was mentioned in the feature article of Textile World for August, 1946, were photographed with Saco-Lowell Shops officials, when the Mexicans visited Biddeford, Me., last month. Left to right, the group comprises: Seated, Carlos Macarty, Mexico City; René Ojeda Alaniz, apprentice from Mexico at Saco-Lowell; Luis Islas Osorno, Mexico City; Mrs. Jennie de Lara, interpreter, Boston; Doctor J. Baz, Washington, D. C.; Robert F. Sweeney, Washington, D. C.; Hector Arguero, Washington, D. C.; Manuel Fernandes, Landero, Mexico City; Egidio Sanches y Sanches, Puebla, Mexico; Enrique Hett, Guadalajara, Mexico; Juan Juarez Flores, Mexico City. Back row, O. F. Bodeau, Saco-Lowell; Robert M. Jones, Saco-Lowell; E. T. Hyde, Saco-Lowell; Carlos Nuno, Guadalajara, Mexico; David Thorpe, Saco-Lowell; Abel Galves, and Maurilio Luna, Rio Blanco, Mexico; Menecia Viveros, Puebla, Mexico; Manuel Ortega, Mexico City; Pedro Camarillo, Cindad Mendosa, Mexico; Nario Cordoba, Mexico City; L. M. Mayo, Saco-Lowell; Emilio Arispe, Jr., Saltillo, Mexico; J. M. Walker, Boston, office representative, Saco-Lowell; Santiago Sestier, Rio Blanco, Mexico; Jean Garnier, Mexico City and Alfredo Dieterlen, Cindad Mendosa, Mexico.

40% More Footage with 25% Less Fuel





The C-B Jet Pump

Hair Dryers at Denston consist of three separate coil-heated sections

AT Denston Felt and Hair Co., Philadelphia, before installing the Cochrane C-B System, broad variations in temperature of the drying coils restricted feeding hair to the dryers to 5 lineal ft. per minute, and coarse hair had to be fed at the No. 3 slow speed to insure drying. ● After the Cochrane C-B System of high pressure, high temperature condensate return was installed, *all* grades of hair now run at the No. 1 high speed and the feed rate is increased to 7 lineal ft. per minute. ● Drying is thorough, no re-runs are necessary, temperature is constant, and condensate is returned to boilers at 310 F instead of 210 F. In addition, 25% is being saved in fuel costs—*a carload less coal every month.*

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COCHRANE C-B SYSTEM

CONDENSATE RETURNED TO BOILERS AT HIGH PRESSURE AND HIGH TEMPERATURE

Quickly Accurately MEASURES POTENTIAL WEAR RESISTANCE

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This fast, scientific method for measuring resistance to surface abrasion reveals the pertinent facts in a matter of minutes. Eliminates time-consuming, expensive performance tests. Used by hundreds of manufacturers for determining surface wearing qualities of paint, lacquer, plastics, leather, rubber, paper, metals, etc.

YOURS on request — Manual explaining fully the Taber Method and the reasons why it pays to pre-test. (Also included—brochure on stiffness and resilience testing with the Taber V-5 Stiffness Gauge.)

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Alfred Suter, *Textile Engineer*
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This paracoumarone-indene resin, composed of resinous polymers of indene, coumarone and similar substances is produced in many grades, varying from a viscous liquid to a hard flake resin, and from very dark brown to pale straw color.

It is used in compounds for waterproofing, mildew-resisting and rot-preventing of heavy fabrics, such as cotton duck. It is also used for the coatings of cords and fibres, for adhesives, and for a stiffening agent.

Other Barrett basic chemicals for the textile industry include:

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YOU'RE BOUND to be way out in front if you finish your fabrics with EXSIZE... the desizer which is a concentrate of natural enzymes, with no trace of harsh alkalis, acids, or destructive chemicals.

EXSIZE works quickly, gently, gives a soft elastic feel, uniform absorbency . . . a good "hand." And what's more a few cents' worth will desize hundreds of yards of cotton or cotton-mixed goods.

Why not have our Pabst Technical Man show you the advantages of this famous desizer right in your own mill . . . or use our laboratories for your tests? We'll be delighted to send free booklet on request.

PABST BREWERIES

Copr. 1946, Pabst Brewing Company, Milwaukee, Wisconsin.

PABST SALES COMPANY
CHICAGO, ILLINOIS
Warehouses at Jersey City, and Textile Warehouse Company, Greenville, S. C.

NEWS ABOUT Suppliers

Saco-Lowell Shops, Boston, Mass., have opened a branch plant in Portland, Me., where they are now producing opening and picking machinery, formerly manufactured at their main Biddeford plant, which will concentrate on other machinery operations.

Universal Winding Co., Providence, R. I., has had its $106,208 alteration project approved by CPA. The company will install a floor in the building formerly used as a foundry to make a two-story structure, and the added floor space will be used for general manufacturing purposes.

Davis & Furber Machine Co., North Adams Mass.—The Foremen's Club of this company held an annual outing Sept. 14 at Lane's Ten Acres on the shores of Lake Attitash in Merrimac, Mass., with an attendance of 140, of whom 80 were invited guests from woolen and worsted mills throughout New England.

Boger & Crawford, Philadelphia, Pa., has appointed Harry J. Riebe as western representative covering Illinois, Indiana, Michigan, Minnesota, Missouri, Ohio, and Wisconsin, with headquarters in the Marion Bldg., Cleveland, Ohio.

Terrell Machine Co., Charlotte, N. C., has purchased the new building at 2900 South Boulevard, Charlotte, from Novelty Sales Co. for a reported price of $200,000, and will use this building for its plant headquarters.

Potter & Johnston Machine Co., Pawtucket, R. I., has been bought by Jacob Ziskind, of Fall River, president of the Crescent Corp., who has become president of Potter & Johnston. Officials under the old ownership, who will also serve under the Crescent Corp., are J. Earle Markant, vice president in charge of plant operations; J. Potter Cunningham, vice president in charge of sales; Norman R. Earle, vice president, and Carl A. G. Birkedal, treasurer. In addition to the new president, the only other new officer is Abraham Ziskind, who will serve as secretary, replacing Norman R. Earle. Potter & Johnston currently employ about 450 people working on an 8-hour shift.

KENNETH H. BARNARD, who has been appointed to head the Textile Resin Application Laboratory of American Cyanamid Co's. Textile Resin Department, developers of Lanaset resin for wool-shrinkage control, and other textile finishes. Before joining American Cyanamid at Bound Brook, N. J., Mr. Barnard was research director of the cotton and rayon divisions of Pacific Mills.

E. I. du Pont de Nemours & Co., Wilmington, Del., has appointed Dr. Samuel Lenher, manager of the Chambers Works, Deepwater Point, N J., to be director of manufacture for the dyestuffs division of the company, with headquarters in Wilmington. He will report to Dr. Ivan Gubelmann, manager of the dyestuffs division.

American Viscose Corp.'s acquisition of the assets and business of Sylvania Industrial Corp., previously reported, became effective Sept. 12. Sylvania is now known as the Sylvania Division of American Viscose Corp., with plant at Fredericksburg, Va.

Westvaco Chlorine Products Corp., New York, has appointed John deF. Meyler as assistant manager of sales. He has been with the company for 11 years and was recently Mid-

SOFTER, BETTER KNITTING COTTON YARNS—DYED OR BLEACHED—

with Laurel Emulsions

Laurel Emulsions—Hydrocop and 3B Softener—condition and soften cotton yarns, mercerized, dyed or bleached. Used by hundreds of mills for over 25 years to assure proper regain, speed up twist, produce even-running yarns and clearer stitch. Laurel Hydrocop and 3B Softener will not turn rancid or discolor yarn on standing. Easily applied over roller trough or cone winders, quilling frames, or twisters. If you want softer, better knitting yarns to help you meet specifications, send for a trial order of these veteran emulsions, Laurel Hydrocop and 3B Softener today.

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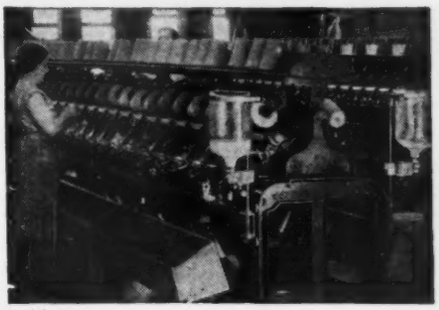

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WHEN IS ONE MULE 13 TIMES Better?

WHEN IT'S A JOHNSON AND BASSETT MULE, WHICH HAS 13 ADVANTAGES OVER RING SPINNING FRAMES AS FOLLOWS: **1.** Up to 50% saving in labor. **2.** Up to 65% saving in H.P. per equal number of spindles. **3.** Up to 50% saving in floor space per equal number of spindles. **4.** Up to 67% saving in investment per comparable capacity. **5.** The J & B Mule will handle a much coarser roving than a frame, thereby increasing production at the card by 15% to 20%. **6.** The J & B Mule produces a true woolen yarn — superior in strength, elasticity, loftiness, roundness and uniformity of size and twist to that produced by frame spinning. **7.** It permits inspection of the thread. **8.** It will successfully spin short staple roving which will not hold together on a frame. **9.** Spindle for spindle, it will produce as much yarn as a frame. **10.** Its cost of upkeep is exceptionally low. **11.** The J & B filling package does not require rewinding for an automatic loom. **12.** Changes for spinning different types of yarn on the J & B Mule are easily and quickly made. **13.** Mule bobbins cost less than frame bobbins.

Complete details and prices on request.

JOHNSON & BASSETT, INC.

Founded 1865

WORCESTER, MASSACHUSETTS, U. S. A.

LOOM BEAM HEADS

WARP BEAM HEADS

Reduce Rising Costs

Hubbard Beam Heads help keep rising production costs in your plant down. You save because Hubbard gives you rugged, balanced construction that assures top-speed production; eliminates work-stopping breakage, costly damage to fabrics. Replacement costs are reduced to a minimum.

Bulldog grip steel tire that can't come off protects rim of tough veneer plywood head—seals moisture out and makes head almost unbreakable. Rim is snag-proof, can't harm workmen or fabrics. Perfect balance eliminates wearing chatter and vibration at highest speeds.

You are invited to write for complete information on Hubbard Beam Heads and related products.

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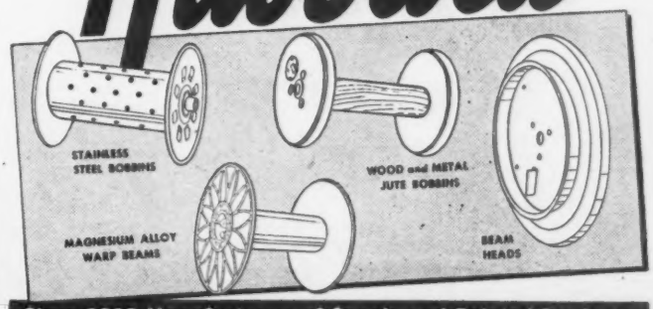

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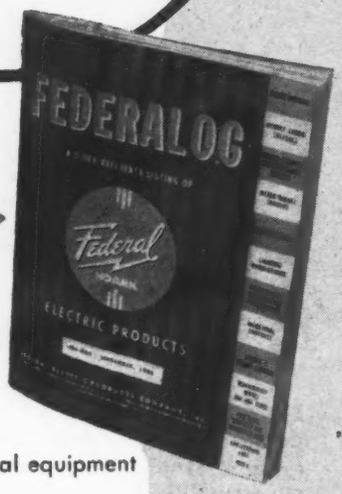

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MOTOR CONTROLS FOR THE TEXTILE INDUSTRIES

MANUAL A.C. STARTER. Bulletin 404—available for motors up to 5 hp 220 v and 7½ hp 440-600 v.

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west sales division manager at Chicago. W. G. Hodson has become resident manager of Westvaco's Chicago office covering Wisconsin, Minnesota, Iowa, Northern Indiana, and Illinois. John M. Richard is resident salesman in St. Louis, with offices at Ninth and Gratiot St.; Arthur F. Smith, resident salesman at Cleveland, with offices at 3540 Groton Avenue S. E.; and Preston F. Tinsley, resident salesman at Cincinnati, with offices at the Second National Bank Building.

Minneapolis-Honeywell Regulator Co., Minneapolis, Minn., has appointed Alfred H. Koch to be Philadelphia branch manager. He has been branch and regional manager at Atlanta since 1938 and has been closely associated with the introduction of the Brown Instrument Division's Moist-O-Graph among textile mills and with instrument control of humidification and in continuous finishing ranges. He succeeds J. C. Dorsey, who has been acting manager in Philadelphia and who now has charge of all manufacturers' business in Philadelphia.

Jacobs Rubber Products, Inc., Danielson, Conn., a subsidiary of E. H. Jacobs Mfg. Co., developed and tested numerous textile products during the war, while the factory devoted its entire output to government requirements. Using Buna "N", "S", Neoprene and other synthetic rubber compounds, the following products are currently being produced: pickers, picker-stick and spindle-rod bumpers, spinning cots, temple-roll tubing, etc.

Ciba Co., Inc., New York—Ralph F. Culver, manager of the Providence office, has retired as of Aug. 1, 1946. Raymond W. Jacoby of the New York office has succeeded him.

Calco Chemical Division, American Cyanamid Co., Bound Brook, N. J.—Dr. George L. Royer, an assistant director of the Physical Chemical Section, Calco Research Laboratories, has been awarded one of the first fellowships ever granted in the field of biological photography by the Biological Photographic Association. The paper "Microscopic Techniques for the Study of Dyeing," prepared by Dr. Royer and his associates, was published in 1945.

H. J. HARP, national treasurer of the Association of Power Engineers, who has joined The Permutit Co., New York, as sales engineer of internal feed-water treatment for the Philadelphia area. His headquarters will be in Permutit's Philadelphia office at 34 South 17th St.

Under his supervision the microscopical section of the Calco Research Laboratories has become outstanding. Calco Chemical Division has appointed John W. Dersch as project engineer of the Marietta Works, Marietta, Ohio. Calco has reemployed Roland C. Morrison as one of its New England representatives, calling on the textile dyeing and printing fields.

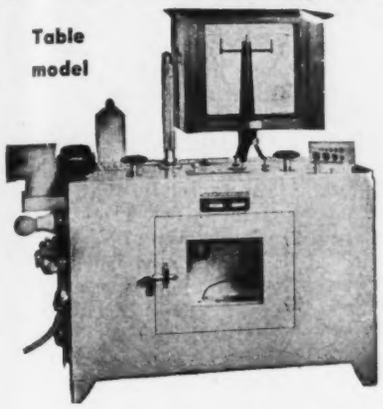
American Cyanamid Co., Textile Resin Department, Bound Brook, N. J., has appointed R. Norman Semler to be assistant to George C. Ramey, advertising manager and director of quality control.

Calgon, Inc., Pittsburgh, Pa., has added Dr. Bernard Harold

CLARENCE H. COLLIER, JR., who has been appointed by the Hyster Co., Portland, Ore., and Peoria and Danville, Ill., to be the new manager of the Industrial Litt Truck Eastern Division. He has been with the company many years and will have headquarters in Peoria.

Textile Testing Ovens

Table model



Eight-Basket Oven—Can be equipped with 8 Baskets—3" x 3" square, and 6" deep; or with 6 Baskets, 4¼" x 4¼" and 6" deep. Sets on table in space of 20" x 40."

Check Yarn Samples for Moisture

Test all your yarn, stock in process, and finished goods—for moisture content—with accuracy. Weighing can be made without opening the oven door.

EMERSON Ovens

Are built in different types to handle wool, cotton and silk. Equipped with baskets to fit the work. Write for details on EMERSON OVENS to fit your process.

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177 Tremont St., Melrose 76, Mass.

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Earn a Manufacturing Profit By Using the Best Machinery and Supplies

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THE ACCEPTED STANDARD

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THE *Engineered* INDUSTRIAL HARD CHROMIUM PLATING FOR TEXTILE MACHINE PARTS

Presents

FACTS about CHROMIUM that YOU SHOULD KNOW!

What IS HARD CHROMIUM PLATING?

Hard Chromium plating is that usually applied directly on the base metal in sufficient quantities to give protection against wear or corrosion or both.

How Does It Differ From "Bright" or Decorative Chromium Plating?

"Bright" Chromium plating used on automobile parts, household utensils, etc., is very thin and has little wear resistance.

What Does Chromium Do For Textile Machine Parts?

Gives the part a definite wear-advantage when thread or fabric must be drawn over it. Permits the part to be wiped clean of material or liquid stains, quickly, easily; important where a quick color change is involved. At the same time the part is protected from rust.

How Can The Value of WALHARD CHROMIUM PLATING Be Proved?

By having a trial lot of your textile machine parts WALHARD plated and comparing the performance of the WALHARD treated part with plain metal or other hard chromium plated parts.

Write now, for your copy of the new WALHARD illustrated booklet.

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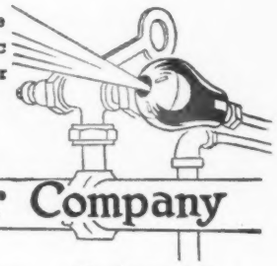
Humidifiers or Humidification

Where desperate need for moisture exists, anything labeled "humidifier" can hardly fail to help. Thus "numidifiers" sometimes get more credit than they deserve.

Mysterious looking objects delivering moisture and humidification have little in common. Humidification reckons with many things; the changing demand of the seasons, of each day, or hour, or minute. It includes peculiarities of plant, processes and product. Finally, it aims at more and better production.

Yes, "humidifiers" may help. Genuine humidification produces astounding results.

No piping changes. The self-cleaning Turbomatic interchangeable with earlier and other models.



Parks-Cramer Company

Fitchburg, Mass. Boston, Mass. Charlotte, N. C.

Gilmore to its research and product development staff.

Onyx Oil & Chemical Co., Inc., Jersey City, N. J., has expanded its production facilities through the acquisition of a plant at St. Charles, Staten Island, N. Y. The new plant is located on eight acres of land owned by Onyx and has its own water supply and dock facilities. Production schedules have been set up for manufacturing resin emulsions, quaternaries, and alkyl naphthas.

Hosiery Mill Accessories Co., Northampton, Mass., has located in the A. D. Sullivan Building on North Street, and is expected to start manufacturing activities shortly. The company will manufacture parts for hosiery machines and employ about 15 persons.

Stearns Magnetic Mfg. Co., Milwaukee, Wis., has appointed Herbert L. Piasecki, formerly with the Color Print Corp., Milwaukee, to be office manager. Curtis H. Stout, Little Rock, Ark., has been appointed Stearns sales representative to cover the state of Arkansas.

Frank G. W. McKittrick Co., Lowell, Mass., will be carried on by the four sons following the recent death of Mr. McKittrick, Sr. Carl J. F. McKittrick has taken over his father's post as treasurer. Burt McKittrick is president and sales manager. Raymond W. McKittrick is vice president and general manager. Vernon R. McKittrick is now also with the company, following his release from military service.

Permutit Co., New York, has acquired the Simplex Valve & Meter Co., Philadelphia. H. W. Foulds, Permutit president, succeeds W. H. Roth as president of the newly-acquired subsidiary, while Mr. Roth becomes the Simplex board chairman.

General Electric Co., Chemical department, Pittsfield, Mass., expects to start production in its new plant for silicone products at Waterford, N. Y., soon after Jan. 1, 1947. Harry K. Collins is manager of the G-E Resin & Insulation Materials Division.

Graver Tank & Mfg. Co., East Chicago, Ind., has named Edward B. Heyden as head of its construction division. He has been associated with The Lummus Co. for the last 14 years. He succeeds Lloyd K. Walls, who is retiring to follow personal interests on the West coast.

Pennsylvania Salt Mfg. Co., Philadelphia, Pa., has appointed George T. Collins as manager of its market research department. Mr. Collins, formerly a chemical engineer in the department, was assistant manager of market research when he was promoted.

Pittsburgh Plate Glass Co., Pittsburgh, Pa.—James Mowry, dean of the country's industrial paint salesmen, was retired after 45 years association with the Pittsburgh Plate Glass Co.'s paint division. In the 90s, Mr. Mowry entered the paint business as office boy in the paint department of the H. W. Jones Mfg. Co., New York. Pittsburgh Plate Glass acquired that company's paint business in 1901.

Carbide & Carbon Chemicals Corp., New York, has reemployed John A. Field as a technical representative for the Fine Chemicals Division at the

BURKART-SCHIER CHEMICAL CO., Chattanooga, Tenn., has completed its new research and development laboratory. Modern apparatus and equipment have been installed throughout, as shown above. Table tops are stainless steel, Albarene stone, or glass; all floors are greaseproof Tiletex. A new laboratory office, library, and conference room have been added.

It's an ill wind--

Yes, it's an ill wind that doesn't blow your way the knowledge of the outstanding qualities of DuraBeau finishes. There is a DuraBeau finish for every fabric . . . so that all fibres and fabrics may be benefited by the lasting beauty and longer life imparted by DuraBeau. Even the most exquisite fabric becomes lovelier . . . loveliness that *lasts* and *lasts.*

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- Wood Washers
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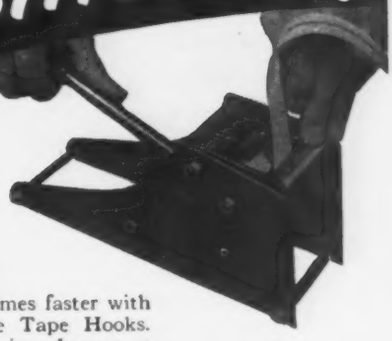
ALL SIZES GOOD DELIVERY

ZEPHYR

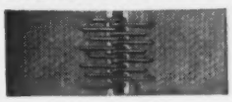
LAUNDRY MACHINERY COMPANY

212 EAST ERIE STREET, CHICAGO 11, ILLINOIS

10 TIMES FASTER THAN STITCHING!



SPINDLE TAPE LACING EQUIPMENT



Lace spindle tapes 10 times faster with Clipper No. 25 Spindle Tape Hooks. Tapes can be prepared in advance so frame is shut down only long enough to place new tape on the pulleys and join ends with connecting pin. Tapes run true—last longer—run smoother—require less tension—VIBRATION IS ELIMINATED

CONDENSER TAPE LACING EQUIPMENT

Lace condenser tapes with Clipper No. 25 Condenser Tape Hooks. Clipper laced tapes, prepared in advance, can be installed in a fraction of the time required for endless tapes. Tape may be purchased in the roll at considerable saving.

CLIPPER BELT LACER COMPANY, GRAND RAPIDS 2, MICHIGAN

Clipper BELT LACING EQUIPMENT UL

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Based on Experience

...Plus Vision

Although WHITMAN, as an organization, is old in years, it is young in personnel, in outlook, in methods. It is geared for modern, up-to-date merchandising and mill operation.

Mills of the WHITMAN group, all of them organizations of prestige, receive these services:

- Selling by a young, aggressive staff, well grounded in textiles, with a keen knowledge of markets.
- Styling with an objective toward fashion trends but an awareness of manufacturing problems and limitations.
- Cooperation when desired on taxation and general management problems.

Inquiries are invited from non-conflicting accounts.

ARLINGTON MILLS *Lawrence, Mass.*

MONOMAC SPINNING CO. *Lawrence, Mass.*

NONQUITT MILLS *New Bedford, Mass.*

NASHAWENA MILLS *New Bedford, Mass.*

WILLIAM Whitman COMPANY, INC.

General Offices: 261 Fifth Avenue, New York 16, N. Y.

Cotton and Rayon Fabrics Division: 40 Worth Street, New York 13, N. Y.

BOSTON 78 Chauncy Street · CHARLOTTE Commercial Bank Building · PHILADELPHIA 1600 Arch Street · LOS ANGELES 810 South Spring Street

New York office. Associated with the corporation since 1936, Mr. Field has been on leave with the RFC.

Jefferson Chemical Co., New York, N. Y., has elected P. M. Dinkins as president and a director. Jefferson Chemical was organized in November, 1944, by American Cyanamid Co. and The Texas Co to produce chemicals from petroleum and petroleum gases. Its first plant, now under construction at Port Neches, Texas, will produce intermediate chemicals used in the synthetic rubber, plastics, textile, and other industries.

The B. F. Goodrich Co., Akron, Ohio, has named Clyde O. DeLong as merchandise manager of its Industrial Products Sales Division, succeeding Fred A. Lang, recently appointed general manager of a newly-created Shoe Products Sales Division.

The Fafnir Bearing Co., New Britain, Conn., has elected Fayette Leister to the office of vice president in charge of engineering. He has been with Fafnir since 1921.

General Electric Co., Schenectady, N. Y., will increase its production facilities for fractional-horsepower motors by the purchase from RFC of the big Ft. Wayne, Ind., plant where the company manufactured turbo-superchargers during the war. G.E. paid $5,000,000 for the plant.

Monsanto Chemical Co., St. Louis, Mo., has reemployed John L. Gillis, who left the company in 1944 to become vice president of Johnson & Johnson International. New Brunswick, N. J. Mr. Gillis was formerly general export manager and assistant director of the Monsanto's foreign department. He will assume duties in St. Louis to be assigned by the executive committee. Monsanto's Plastics Division, Springfield, Mass.,

PRODUCERS' CEILING PRICES for chlorine, caustic soda, and soda ash were increased 5% on Sept. 16 by OPA. As required by the new price control act, resellers are permitted to raise their ceilings so as to give them their March 31, 1946, percentage mark-up over current acquisition cost.

J. C. LEONARD, who has been appointed by Oakite Products, Inc., New York, as sales manager of its Industrial Marketing Division. He has been with Oakite for over 22 years, in the last 16 years of which he was manager of the Chicago Division. His headquarters now will be at the general offices in New York.

has appointed Edmund D. Kennedy as sales promotion manager. Dr. C. K. Bump and H. W. Mohrman have been appointed as assistant directors of research.

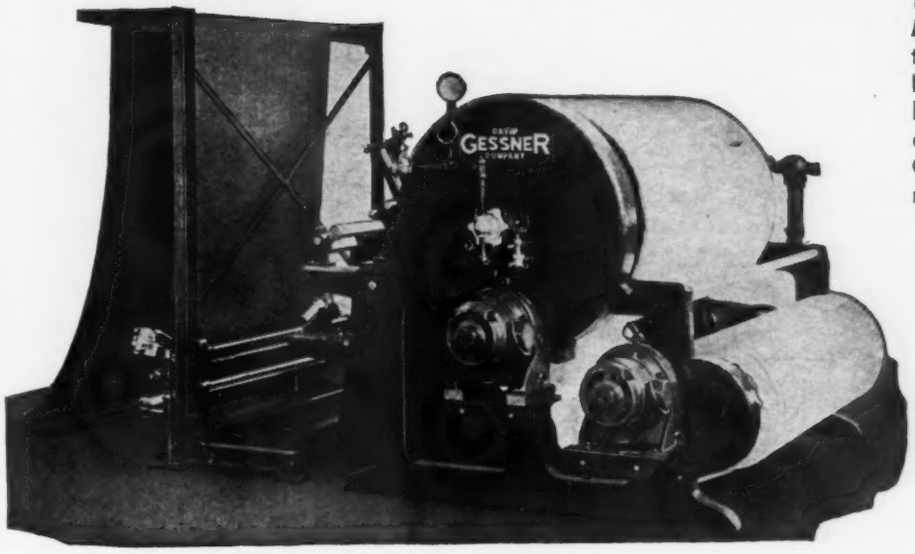
Allis-Chalmers Mfg. Co., Milwaukee, Wis., has appointed Richard F. Muller as manager of its New Orleans district office, succeeding F. W. Stevens, who after 41 years of service has requested to be released from this responsibility.

Wickwire Spencer Steel, Division of Colorado Fuel & Iron Corp., has moved its general sales manager's office from 500 Fifth Ave., New York, to 361 Delaware Ave., Buffalo 2, N. Y. The wire department general office, the market research department, and the advertising department have also been moved to the same address. The wire rope department has been moved to the plant at Palmer, Mass. The New York office will hereafter be known as the Eastern district sales office, in charge of Percy Jenkins.

Hercules Powder Co., Wilmington, Del., has appointed Robert E. Segerdell as office manager of its San Francisco office. He was formerly assistant office manager at New York.

Federal Electric Products Co., Newark, N. J., has purchased the Wurdack Co., St. Louis, Mo., electrical panel boards and switchboards. Cole Products Co., Long Island City, N. Y., long affiliated with Federal Electric, has been merged.

The New Gessner Open Decating Machine Simplifies Operations and Cuts Costs



The new Gessner Open Decating Machine embodies important new time and money-saving principles. In fact, Gessner Open Decating has become a one man operation in an ever-growing number of mills. Gessner improvements include automatic tension controls for the decating apron, which prevent apron slap even at high speeds and which greatly lengthen the life of the apron. Mechanisms control the firmness of the decating roll without added tension on the apron. Individual motors drive each cylinder. There are no clutches. The Gessner Open Decating Machine shown here is equipped with a platform and guides to guide the cloth as it is loaded into the machine.

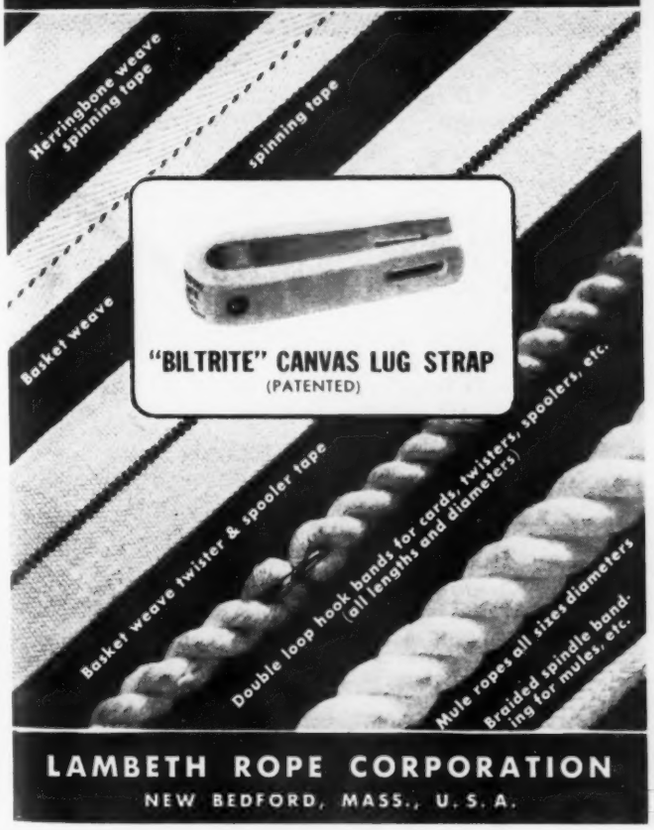
DAVID GESSNER CO.

IMPROVED CLOTH FINISHING MACHINERY

WORCESTER, MASS.

LAMBETH PRODUCTS

FOR SPINNING, TWISTING, SPOOLING, WEAVING


Herringbone weave spinning tape
spinning tape
Basket weave
"BILTRITE" CANVAS LUG STRAP
(PATENTED)
Basket weave twister & spooler tape
Double loop hook bands for cards, twisters, spoolers, etc. (all lengths and diameters)
Mule ropes all sizes diameters
Braided spindle banding for mules, etc.

LAMBETH ROPE CORPORATION

NEW BEDFORD, MASS., U. S. A.

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Fast, Safe Way to Clean Heddles!

You'll sidestep fire menace and obnoxious fumes of toxic solvents when you clean heddles and loom harness this safe Oakite way:

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You'll want to know more about this low-cost heddle-cleaning method. So why not drop us a card requesting the Oakite "66" Digest? It's 16-pages of data designed to save you time and money on this and 65 other important mill maintenance-cleaning tasks! Write NOW!

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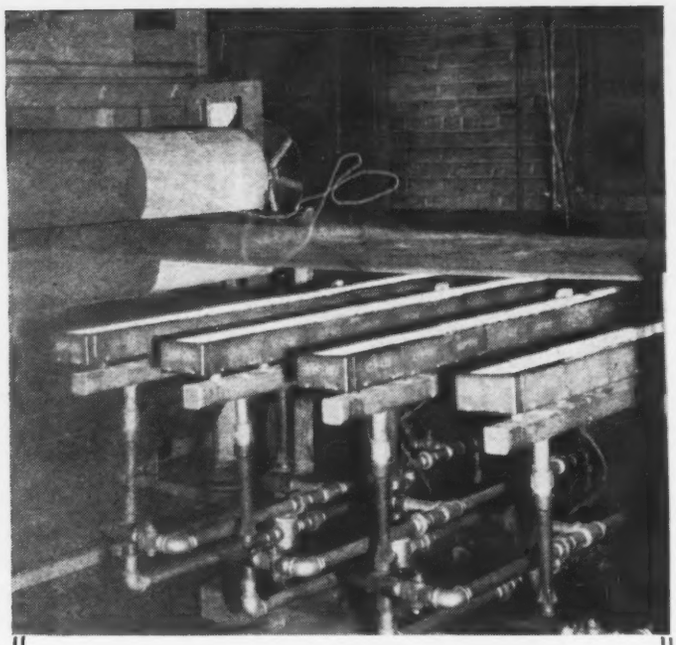

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Perfect Finish—Long Life

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HUYCK SANFORIZER and Palmer Blankets are daily meeting the most exacting requirements of finishers throughout the industry. From the lightest and finest fabric to the coarsest denim, there is a special Huyck blanket to meet your specific needs.

Huyck Sanforizer blankets retain high shrinkage and finish properties to the last.

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NEWS ABOUT *Mills*

Cotton Mill News

Anchor Duck Mills, Rome, Ga., has been sold to Anchor Rome Mills, Inc., Rome, Ga., newly organized. Jacob Ziskind of Fall River, Mass., is chairman of the board of the latter and has controlling interest in it. Other officers are Charles A. Sweet, president; Aubrey A. Hobbs, vice president and general manager; J. Wallace Cooper, treasurer.

Anniston Mfg. Co., Anniston, Ala., has awarded contract to Daniel Construction Co., Birmingham, Ala., for a $150,000 weave shed.

Bath Mills, Inc., Bath, S. C., has let contract to J. L. Coe Construction Co., Charlotte, N. C., for construction of a one-story dyehouse.

Dundee Mills, Inc., Griffin, Ga., is planning to install an open-width continuous bleaching process and a continuous vat-dyeing process. These operations will be housed in a building for which plans are now being drawn. The company also has on order 65 looms to be delivered in December and January.

Fitzgerald Cotton Mills, Fitzgerald, Ga., will soon begin a program of expansion.

Green River Mills, Inc., Tuxedo, N. C., is constructing a 20,000 sq. ft. addition which is expected to increase production by 50%.

Hathaway Mfg. Co., New Bedford, Mass., plans expansion and improvements to the extent of $2,000,000.

Jackson Mills, Spartanburg, S. C., is completing a modernization program at its No. 2 unit, including 325 new looms and a slasher. A new drawing-in room will be set up, and the air-conditioning system expanded.

Jefferson Mills, Inc., Jefferson, Ga., has let contract to Fennell Construction Co., Gainesville, Ga., for a one-story $60,000 addition.

Joanna Textile Mills Co., Goldville, S. C., will spend $2,000,000 on an expansion program. Included in the project are a $300,000, 90,000 sq. ft. addition, new machinery to cost about $1,150,000, and a $500,000 apartment building for employee housing. The number of spindles will be increased from 89,298 to 103,176, and 200 employees will be added to bring the total up to 1,200. The program is scheduled for completion by next spring, and 400 new looms will be installed in January.

Kilby Cotton Mills, Montgomery, Ala., a prison mill, has been consolidated with another prison mill in Draper, Ala. Sale of old machinery from the Draper unit has been recommended to help pay for new equipment.

Longleaf Mills., Inc., has received CPA permission to build a $100,000 yarn mill in Matthews, N. C. Alex Redd Davis, Charlotte, N. C., heads the company.

Magnolia Cotton Mill Co., Magnolia, Ark., has consolidated with N. & W. Overall Co., Inc., and will henceforth be known as the Magnolia Division of the latter company. The mill is being expanded.

Menlo Textile Co., Menlo Park, Calif., has been purchased by Michael L. Belangie and Donald M. Watt. John DeMell will remain as weaving superintendent. The mill produces cotton drapery and upholstery fabrics and twist loop rugs.

Quisett Mill, New Bedford, Mass., now idle, will be sold at auction.

Pepperell Mfg. Co., Lindale, Ga., recently completed several installations, including new equipment for dyeing, air-conditioning equipment in two spinning rooms, and a music broadcasting system. It has completed construction of the

BARBER-COLMAN SPOOLING AND WARPING IS ACCEPTED PRACTICE IN PRACTICALLY ALL AMERICAN COTTON MILLS

To anyone who might have the opportunity to visit all the cotton mills in the United States, the scene above would become familiar because of its almost constant repetition. This operator is tending a Barber - Colman Automatic Spooler . . . filling empty bobbin pockets, taking off full cheeses, and putting on starters. All the other spooling functions . . . finding the ends, tying in new bobbins with weaver's knots, clearing out imperfections in the yarn, starting the cheese on the winding drum, measuring the cheese to gage its fullness, and even delivering the empty bobbins to a sorting table . . . all these functions are performed *automatically* by the machine. The result is exceptionally uniform quality of spooling at low spooling cost. Every mill that has put in Barber - Colman Spoolers and Warpers has bought them because they would return the entire investment in a relatively short time, and after that would produce a substantial reduction in costs, and improvement in quality, for many years of practically trouble-free operation.

AUTOMATIC SPOOLERS • SUPER-SPEED WARPERS • WARP TYING MACHINES • DRAWING-IN MACHINES

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This Man Improves On NATURE

The chemist in his laboratory has often improved upon the handiwork of nature—for scientific processes make possible greater uniformity and greater production than nature achieves.

From its infancy, chemistry has served mankind. Today more than ever, products created through chemical means are enriching the lives of men and women.

Especially in the field of textiles, chemistry is playing an important part . . . and the research and production chemists of Burkart-Schier are constantly on the alert perfecting new chemicals and maintaining the quality of established lines.

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MANUFACTURING CHEMISTS FOR THE TEXTILE INDUSTRY

Let **Southworth**

Help You

Let Southworth help you in making your plans for extra Business and extra Profits. Get the increased production and lower costs made possible by SOUTHWORTH'S new, improved, TEXTILE HUMIDIFYING SYSTEMS.

A new SOUTHWORTH system will give you a simplified design that means better evaporation and more sensitive control combined with exceptionally flexible power.

Write Today For Complete Information.

Southworth **Machine Co.**

Textile Humidifying Systems

30 WARREN AVE. PORTLAND, ME.

new bleachery at Opelika, Ala. The ultimate cost of this plant will be about $3,000,000.

Republic Cotton Mills, Great Falls, S. C., a unit of J. P. Stevens & Co., New York, N. Y., is reported to be planning a $5,000,000 multi-story finishing plant.

Ruby Cotton Mills, Gastonia, N. C., has been sold to U. S. Rubber Co. The mill operates 18,768 spindles.

Springs Cotton Mills, Lancaster, S. C., is erecting a foundry to make iron castings for its plants.

Spindale Mills, Inc., Spindale, N. C., has begun construction of a 90 x 100 ft. addition.

Voit Rubber & Textile Co., Inc., recently purchased the Gastonia, N. C., plant of Carolina Arts Co. and will continue the production of cotton sheetings for use in the manufacture of athletic equipment in the company's Los Angeles, Calif., plant.

Wool Mill News

Aberdeen, N. C.—Approval has been granted by CPA for construction of a $2,250,000 woolen mill. Identity of the firm has not been revealed. C. M. Guest & Sons, Greensboro, N. C., industrial engineers, will construct the plant.

Allendale Worsted Co., North Providence, R. I., has invited bids for a 50 x 128 ft., one-story addition. Fontaine & Fontaine, Woonsocket, prepared the plans.

Appleton Woolen Mills, Appleton, Wis., plans two one-story additions at its branch plant in Reedsburg, Wis., to expand the picking and carding rooms.

Artloom Corp., Philadelphia, Pa., has plans for expansion to cost about $650,000, of which $300,000 will be used to buy additional equipment.

Bigelow-Sanford Carpet Co., Inc., Thompsonville, Conn., is preparing plans for a $5,000,000 long-range expansion program to include equipment and buildings.

G & M Mfg. Co., Lowell, Mass., recently formed, is doing commission weaving of woolen and worsted fabrics with nine automatic looms.

Hargo Woolen Mills, Inc., has leased 25,000 sq. ft. of floor space in New Bedford, Mass. Delivery of two woolen cards and four spinning frames is expected soon. Other equipment will be added later. B. H. Earnstein, Jr., is president.

Lees-Cochrane Co., Inc., Glasgow, Va., carpet manufacturing division of James Lees & Sons Co., Bridgeport, Pa., will operate under the name of the parent company.

Pola Stout, Inc., has leased space at 2080 East Wheatsheaf Lane, Philadelphia, Pa., and has equipped it for the manufacture of woolen fabrics. Pola Stout, president, formerly with Botany Worsted Mills, will design all fabrics and supervise production. Production is scheduled to begin in November with 13 box looms and one knitting machine. W. S. Watkins is in charge of production.

Striar Woolen Mill, Brewer, Me., which recently burned down, has set up a shoddy mill in Orono, Me. The company bought Orono Pulp & Paper Mill and is setting up a woolen mill with 12 sets of cards.

Rayon & Silk Mill News

Associated Textiles of Canada, Ltd., Louiseville, Que., will start work on a $100,000 extension to its weaving and dyeing departments.

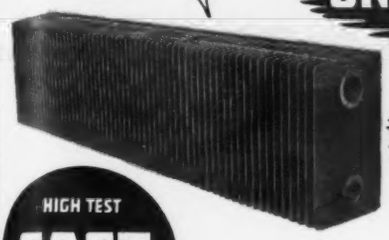
Benpeer Silk Co., Paterson, N. J., has been organized to buy thrown silk and process it for weaving. Principals are Peter F. Magagna and Benjamin Smith.

Celanese Corp. of America is reportedly expanding its plans for proposed mill at Rock Hill, S. C., with total construction costs raised to $40,000,000. The plant will employ over 6,000 workers in the manufacture of rayon yarns and fabrics.

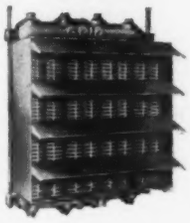
Cetwick Mill, Asheboro, N. C., has a $100,000 addition now under construction.

Chicopee Mfg. Co. is already planning to expand its recently-opened Lumite plant in Cornelia, Ga. About $2,-

HERE'S WHY GRID UNIT HEATERS WILL *not* PLUG UP WITH LINT DUST ETC.



HIGH TEST CAST IRON HEATING SECTIONS



* One piece construction heating sections (patented) of high test cast iron that withstand steam pressure up to 250 lbs.

* No soldered, brazed, welded or expanded connections to become loose or develop leaks.

* No electrolysis to cause corrosion, breakdowns, leaks, or heating failures.

GRID High Test Cast Iron Unit Heaters are engineered especially to overcome atmospheric conditions always present in textile mills. Many have been in use for 16 years without maintenance expense. Capacity tables and complete details upon request.

SEND! *for booklet that tells why corrosion destroys unit heaters—free upon request.*

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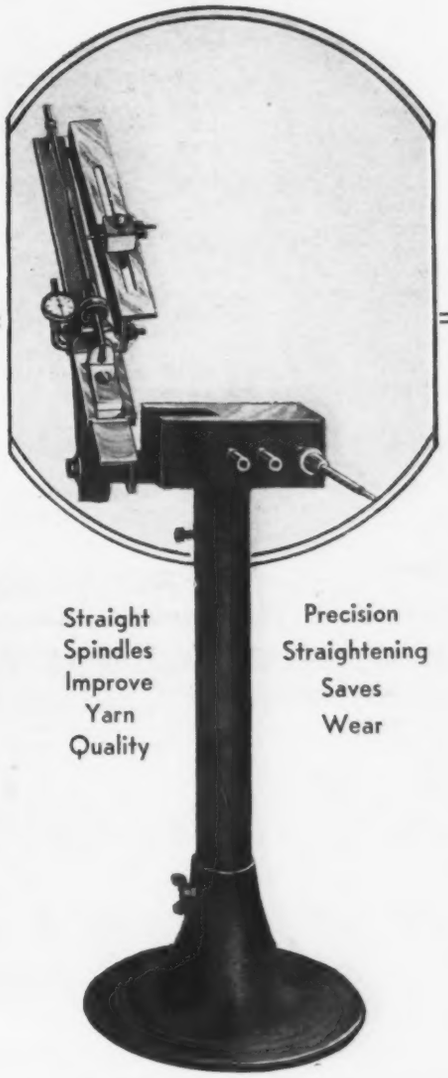

Straight Spindles Improve Yarn Quality

Precision Straightening Saves Wear

You know that bent or crooked spindles cut your production rate and increase both cost and wear. You are assured accurate straightening *on the actual running points*—the Guillet Way.

Get full efficiency from your spindles through proper care. We invite you to try the Guillet Spindle Straightener, and see its value to you in actual operation.

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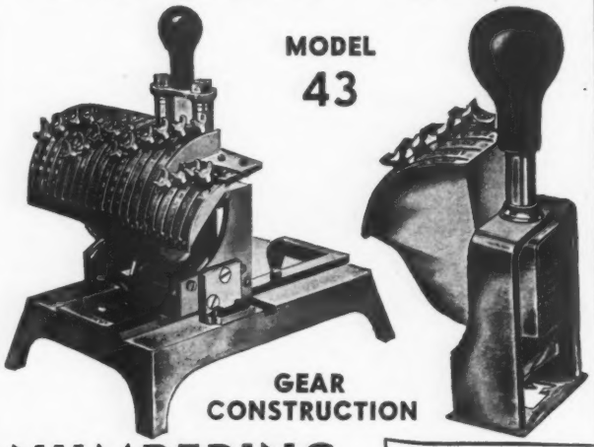
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SPEED SET Machines are used to number and mark industrial tags, labels, tickets, forms and cards. Numbers and letters can be instantly changed to various combinations—all-steel construction—steel engraved wheels—automatic inking—designed with any number of wheels and engraving for your own requirements.
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CHEMICAL SPECIALTIES
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We are equipped to produce chemicals to meet your individual requirements. Technical Service Without Obligation.

500,000 will be spent and employment increased from 250 to 800.

Classe Ribbon Works, Anniston, Ala., has completed an $85,000 expansion program.

Hartford Rayon Corp., Rocky Hill, Conn., will increase rayon production by more than 30%. Charles S. Fowler is vice president and general manager.

R. K. Laros Silk Co., Bethlehem, Pa., is erecting a $165,000 boiler plant in which will be installed two 300-hp. stokers and auxiliary equipment.

Luzerne Throwing Co., Wyoming, Pa., has bought from the government a former war plant in Newark, N. Y., and has started throwing operations there on rayon and silk. W. Magagna, Wilkes-Barre, Pa., is now in charge of operations. The company recently bought machinery from Nolde & Horst, Reading, Pa., for this expansion. The plant has 150,000 sq. ft. and will employ 500 people.

Visking Corp. will build a $300,000 plant to manufacture plastic-bonded unwoven fabrics in North Little Rock, Ark. Priorities to buy machinery valued at $175,000 have been obtained.

Knitting Mill News

Altamahaw Hosiery Mills, Ossipee, N. C., will move into a new plant by Nov. 1.

Bassfield Knitting Co., Bassfield, Miss., is a newly organized company which will employ 100 people in the manufacture of nylon hosiery.

Burcon Hosiery Mills, Asheboro, N. C., will go into full scale production of women's full-fashioned hosiery early this winter. The plant of this new $300,000 company is expected to be ready for installation of machinery by Nov. 15. W. N. Jeffries is president.

William Carter Co., Needham Heights, Mass., has opened auxiliary finishing plants in Forsyth, Ga., and Gilbertville, Mass.

Columbia Knitting Co., Columbia, Miss., is a newly organized company which will employ 60 to 70 people in the manufacture of full-fashioned nylon hosiery.

Cooper Wells & Co., which operates hosiery mills in Decatur, Ala., and St. Joseph, Mich., has been purchased by Miller Wohl Co., Inc., a women's apparel retailing organization.

Douglas Hosiery Mill, Douglasville, Ga., has doubled capacity by the installation of ten new machines to make men's socks. Previously, only misses' and children's socks were produced.

Franklin Hosiery Mills, Inc., Hickory, N. C., newly organized with authorized capital of $100,000, has started operations with about 25 machines. Jay H. Baker is one of the incorporators.

Franklin Hosiery Mills, Williamsport, Pa., has been purchased by United-Rexall Drug Co. The mill manufactures nylon hosiery, which will now be sold through the outlets of United-Rexall.

Gay Hosiery Mills, Inc., Hickory, N. C., newly organized with authorized capital of $100,000, will manufacture hosiery. Principals, all of Hickory are Z. W. Brown, H. L. Good and R. L. Geouge.

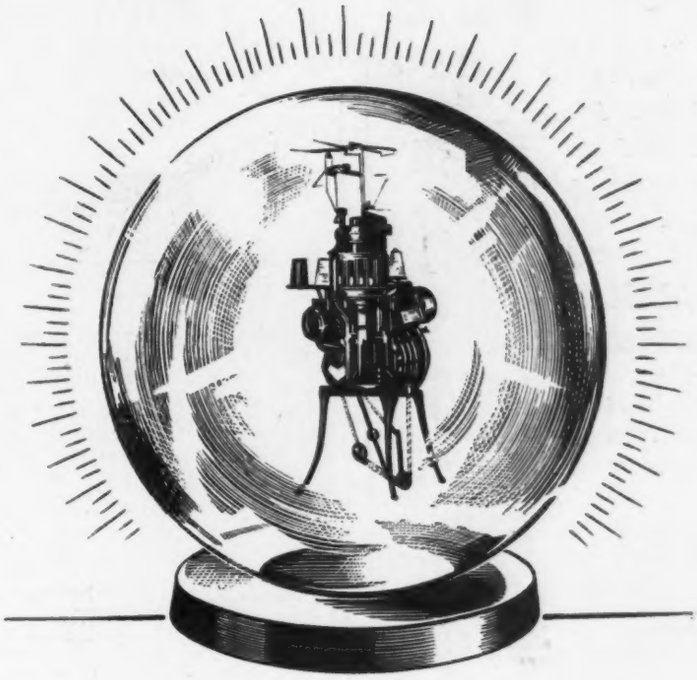
Grand Mere Knitting Co., Ltd., Grand Mere, Que., has begun erection of a 250x300 ft., one-story addition, for which general contract has been let to **Cote & Desaulniers,** Ltd., Grand Mere. Cost, including equipment, will be over $250,000.

Grover Knitting Mills, Ltd., Montreal, Que., has awarded contract to W. G. Hunt, Ltd., Montreal, for extensions and improvements to cost about $75,000.

Infant Socks, Inc., Reading, Pa., has installed machinery in a branch plant in Clayton, Ala.

Ingold Hosiery Mill, Statesville, N. C., newly organized, will soon begin operations in a new building making men's anklets and infants' socks. Edward B. Ingold is owner.

Jaclyn Hosiery Mill, Camden, S. C., has begun work on the first of four additions. This unit, which will cost $90,000,



Looking Ahead with S & W

Ever since its founding more than eighty years ago Scott & Williams has consistently anticipated and met the ever changing and increasingly exacting demands of circular knitting manufacturers for more efficient knitting machines.

Today, after five years of producing almost exclusively for war purposes, S & W is preparing for what will undoubtedly be the greatest era of expansion in knitting history. Although full production will not be possible for several months, we are rapidly expanding our facilities...increasing the speed and efficiency of our manufacturing methods...and broadening the bases of our sources of supply for working materials. This is part of a long range, carefully planned program in which research and machine improvement will play an extremely important part.

Meanwhile, everything possible is being done to produce the greatest volume of vitally needed machines and parts. You may rest assured that every effort is being made to meet *your* needs...and that S & W is building a knitting machine service on which you can rely for many years to come.

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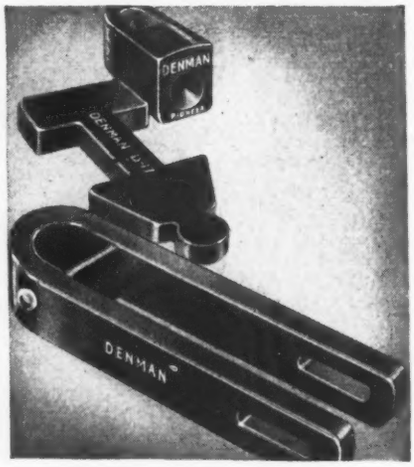

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PICKERS LUG STRAPS

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Lowest Cost Per Loom Per Year

The Terrell Co., *Inc.*

CHARLOTTE, N. C.

James F. Notman, Needham, Mass. . . . . N. E. States
E. W. S. Jasper, Inc., Elizabeth, N. J., Penn., N. Y. and N. J.
W. J. Westaway Co., Ltd., Hamilton & Montreal . . Canada
Geo. Thomas & Co., Manchester, Eng. . . . European Agent

is expected to be in operation within six months.

Laurentian Textile Co., Ltd., St. Jerome, Que., has awarded contract for construction of a 60 x 85 ft., one-story extension to its plant. Cost is estimated at $23,000.

Lewis Knitting Co., Janesville, Wis., plans to remodel and improve its mill at cost of about $30,000.

McGaugh Hosiery Mills, New Braunfels, Texas, will begin work at once on expansion and improvements in its nylon hosiery production. Cost, with equipment, will be about $75,000.

Midway Hosiery Mill, Inc., Longview, N. C., has been chartered with capital of $100,000 to manufacture hosiery. Principals are Fred M. Smith, Agnes H. Smith, and Jane W. Hudson, all of Hickory, N. C. The company is already in operation, producing men's half-hose.

Morristown Knitting Mills, Morristown, Tenn., has purchased a large building in Russelville, Tenn., which is being remodeled for use as a branch plant. Machinery is now being installed. At the Morristown plant, the manufacturing department has been moved to a new building, and the original building is now equipped as a finishing plant.

Newton Knitting Mills, Newton, N. C., is nearing completion of a $125,000 mill. Horace Isenhower is owner.

Old Colony Knitting Mills, Inc., Newton, Mass., is completing a 55 x 150 ft., two-story addition.

Perry Knitting Co., Inc., Perry, N. Y., is embarking on a modernization and rehabilitation program. To cope with an acute labor shortage, the company has placed into operation two buses, providing free transportation to and from the mill for workers living in nearby villages.

Queensland Looms, Inc., Charlotte, N. C., has been incorporated with authorized capital of $100,000 to do a general knitting business. Principals, all of Charlotte, are W. H. Suttenfield, Jr., Helen Suttenfield, and William Barnhardt.

Real Silk Hosiery Mills, Indianapolis, Ind., has CPA permission to make extensions and improvements to its boiler house. Cost will be $70,130.

Renger Hosiery Mills, Richfield, N. C., newly organized, has begun operations with three 30-section full-fashioned machines.

Revis Hosiery Mill, Marion, N. C., has started operation of a looping plant. About 15 workers will be employed.

Ronnie Lace Co., Coventry, R. I., has bought the property and equipment of Bodell Lace Co., Pawtucket, R. I.

Roselin Mfg. Co., Willimantic, Conn., has built a 25,000 sq. ft. air-conditioned plant for tricot knitting.

Royal Fashion, Inc., Woonsocket, R. I., recently organized, will manufacture 100% wool hosiery for men. John P. Guerin heads the company.

Shelton Hosiery Co., Shelton, Conn., plans a 100 x 150 ft., two-story mill. Cost, including equipment, will be about $150,000. Leo F. Caproni, New Haven, Conn., is architect.

Terry Hosiery Mill, High Point, N. C., has started work on a $15,000 addition which will provide about 5,000 sq. ft. of floor space. A second addition, measuring 75 x 100 ft., will be started soon.

Van Raalte Co. has awarded contract to Merchant Construction Co., Asheville, N. C., for construction of a mill on a recently acquired site at Franklinton, N. C.

W. & S. Hosiery Mills, Sinking Springs, Pa., will be operated as a partnership by Karl A. Worsinger, Wyomissing, Pa., and Frank W. Simon, West Lawn, Pa., to manufacture full-fashioned hosiery and hosiery machines. It will also repair hosiery machines.

Walgo Knitting Mills, Allentown, Pa., newly established, is equipping a plant for the manufacture of circular knitted fabrics.

Wilmington Hosiery Mills, Wilmington, Del., plans a two-year expansion program

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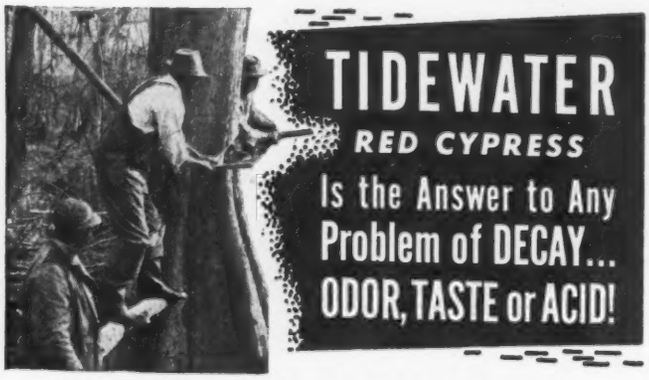

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and has set a production goal of 1,000,000 doz. prs. of socks annually. Over $250,000 worth of additional knitting equipment will be bought, and employment will be raised from 150 to 450.

Dyeing & Finishing Plant News

All-Tex Finishing Co., New York, N. Y., is moving its operations to Hawthorne, N. J., where it will be known as Trutex Dyeing Corp. Over $100,000 is being spent to improve the plant, which will have a capacity of 60,000 yd. per day. Thomas Zarello is in charge.

Andover Yarn Dyeing Corp., Andover, Conn., has been organized by Murray G. Catin, president of the company.

Arnold Print Works, North Adams, Mass., is replacing its old-type boilers with a new coal-burning one and is building an addition to house it.

Joseph Bancroft & Sons, Inc., Wilmington, Del., will begin work at once on the expansion of several buildings. Improvements, including equipment, will cost over $200,000. H. A. Kuljian & Co., Philadelphia, Pa., are in charge of engineering.

Byron Weston Co., Dalton, Mass., has awarded contract to George E. Emerson, Pittsfield, Mass., for foundations for a two-story mill with 30,000 sq. ft. of floor space. A textile finishing department is included in the project, which will cost an estimated $180,000.

Chemo-Textile, Inc., West Warwick, R. I., has been chartered to manufacture, dye, and process yarns and other textile materials. Principals are Ernest A. Jenckes and Evelyn Z. Clark, Providence, R. I., and Marshall Swan, Barrington, R. I.

Gurney Mfg. Co., Prattville, Ala., has opened a new dyehouse and is installing additional machinery. Oil-burning equipment has been installed.

Hanes Dye & Finishing Co., Winston-Salem, N. C., has completed a $125,000 expansion program including a finishing room, an extension of the bleach house, and a warehouse.

Ho-Ho-Kus Bleachery, Ho-Ho-Kus, N. J.—Controlling interest has been purchased by James J. Colt, head of Columbia Combining Co., Brooklyn, N. Y., and other enterprises. Bertram H. Saunders will continue as president, and J. Gilbert Mearns, now plant manager, will continue with the title of first vice president in charge of plant.

K & T Printing Co., Clifton, N. J., has been organized by Frank Kortvellesy and Robert H. Tathan to do screen printing.

Lexington Finishing Co., Lexington, N. C., is installing one large dyeing machine and has other machinery and equipment on order. The plant will be housed in part of the former weave room of the Barbet mill.

Moss-Foy Textile Co., Inc., Mount Airy, N. C., will soon start operation of a skein-dyeing and winding plant in a 48 x 60 ft. building now under construction. W. H. Foy is president of the company.

North Georgia Processing Co., Inc., Toccoa, Ga., has begun erection of a one-story thread mill which will cost $80,000, with equipment.

Pantasote Plastics, Inc., is the new corporation resulting from a merger of Pantasote Co., Passaic, N. J., and Textileather Corp., Toledo, Ohio. Hans Wyman heads the company.

Radiant Textile Printing Co. has begun operations at 341 Water Street, New York, N. Y., with about 3,000 sq. ft., to do single and multicolored pigment roller-printing on textiles and plastics.

Richard Finishing Co., Inc., New York, N. Y., purchased two large buildings in Jermyn, Pa., for use as a dyeing and finishing plant for cotton and rayon circular-knit goods.

Standard Bleachery, Carlton Hill, N. J., is installing a new continuous-dyeing unit and an additional Sanforizing unit.

Vitro-Marpiece Dye Works, Inc., Hawthorne, N. J., is expanding to include box dyeing in its operations. The company plans to add the processing of silk.

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NEWS ABOUT Men

John C. Hanbury-Williams will succeed **Samuel Courtauld** as chairman of Courtauld's Ltd., London, England, on Oct. 24. Mr. Courtauld is retiring because of his health after holding the chairmanship for the last 25 years.

Royal Little has been elected president of Nashua Mfg. Co., Nashua, N. H., succeeding **Robert Amory.** Other officials elected included **Charles H. Dyson,** treasurer and assistant secretary, **J. Linzee Weld,** vice-president, and **Robert R. Thruber,** secretary.

Stanley Phillips has been elected executive vice-president of Cannon Mills, Inc., and will take over some of the administrative duties heretofore handled by **Frederic A. Williams,** president. **C. Bagley Wright** and **Joseph W. Barnett** have become vice-presidents.

Harold Crabtree, formerly president of Woods Mfg. Co., Montreal, Que., has been named chairman of the board.

Lawrence G. Weston has been elected assistant vice-president of Manville Fabrics, Inc., Manville, R. I.

Claude L. Wyrick, has resigned as vice-president and general manager of Lola Mills, Inc., Stanley, N. C. He plans to enter business for himself in the near future.

Walter H. Hildrick has been elected director and vice-president in charge of manufacturing of Nashua Mfg. Co., Nashua, N. H. He succeeds **Walter H. Whipple,** who resigned as vice-president in charge of manufacturing and was elected a director.

Andrew W. Macy, vice-president and treasurer of Nashawena Mills, New Bedford, Mass., has become vice-president and general manager of Nonquitt Mills, Inc., New Bedford. **Clifford H. Ashley,** formerly superintendent of the latter company, is now manufacturing agent.

N. Barry Durfee, formerly with Cranston Print Works, Webster, Mass., has been named vice-president of Lincoln Bleachery & Dye Works, Lonsdale, R. I., a division of Lonsdale Co. At the same time, **Ralph V. Carlson** was appointed manager to succeed the late John T. McMannus.

F. L. Miller, Jr., has been elected chairman of the board of United Hosiery Mills Corp., Chattanooga, Tenn. **J. D. Moore** has succeeded him as president of the company.

Walter Bollier, vice-president and general manager of Phoenix Silk Corp., Allentown, Pa., has been elected president of the company.

Bennett Gilbert is assisting with the management at Catawba Hosiery Co., Catawba, N. C., which is owned by his father, **C. B. Gilbert,** and **W. R. Keith.**

A. S. Thomas, formerly general superintendent of Werthan Bag Corp., Nashville, Tenn., has become vice-president of Monticello Cotton Mills Co., Monticello, Ark.

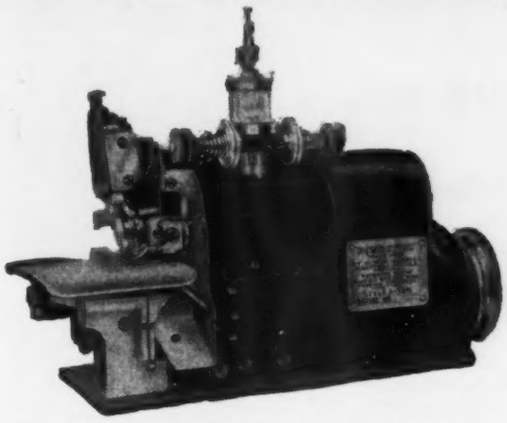
Charles W. Palmer, vice-president and member of the board of directors of Canadian Celanese, Ltd., Drummondville, has been elected executive vice-president, and a member of the finance and executive committee.

F. L. Miller, III, has been named vice-president of United Hosiery Mills Corp., Chattanooga, Tenn.

Earl L. Clifford has been named manager of Uncas Finishing Co., Mechanicsville, N. Y. He joined the company Jan. 1 as superintendent.

Wilson B. Wadlow has been made sales manager of Goodall Co., New York. He has been with the company for nine years.

J. B. Goldberg, research director of J. P. Stevens & Co.; **E. C. Pfeffer, Jr.,** research director of Cluett, Peabody Co.; and **Dr. R. Houtz,** of the research division at Buffalo of



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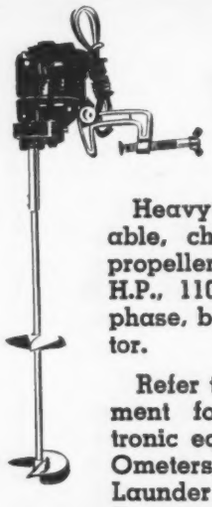

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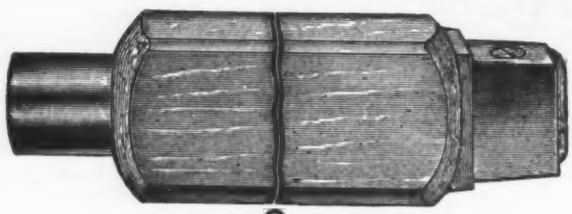

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NEWS ABOUT MEN

E. I. du Pont de Nemours & Co., were among the 160 members who recently attended the annual conference of the British Textile Institute in England, which was the first to be held since 1939. In all, 21 technical papers were presented at the conference.

William M. Appleton, president of American Viscose Corp., Wilmington, Del., has resigned and been succeeded by **Dr. Frank H. Reichel,** who has been chairman of the board and who retains that office. Mr. Appleton has been retained as consultant. **George S. Hills** and **H. L. Dalton** were elected directors, and **William B. Olmstead** and **George M. Allen** were elected vice presidents.

Thomas E. Gantz, general manager of Temple Full-Fashioned Hosiery Co., Temple, Pa., was in charge of arrangements at a recent outing of the Keystone Hosiery Manufacturers, Inc., at the Mountain Springs Home Association near Reading. Among the out-of-town guests, was **Earl Constantine,** president of the National Association of Hosiery Manufacturers.

The following Indian textile men are in this country to purchase textile mill equipment: **Murarji Jadhavji Vaidya,** Bombay Silk Mills, Ltd., Bombay, seeking silk and rayon machinery; **Ranjit Singh,** R. C. Cotton Mills Co., Lucknow, seeking textile machinery and plant; **Hansraj Dhanda,** Swadeshi Mfg. Syndicate, Ltd., Ludhiana, seeking hosiery and wool spinning equipment.

W. E. Herrick, formerly with Milton Mills, Miltonia, N. H., has been named production superintendent of Pendleton Woolen Mills, Pendleton, Ore.

Edmund Kuehnel, for the last three years superintendent of Suskana Mills, Inc., New York, N. Y., has been named superintendent of Pittsfield Mills, Pittsfield, N. H. He succeeds **Allen K. Remington.**

Maurice E. Gelinas has been appointed instructor in the Engineering Department of Lowell Textile Institute, Lowell, Mass., to specialize on mechanical drawing and related subjects. Other appointments of instructors to the faculty follow: **Isaac Chase, Jr.,** to instruct in physics; **Martin J. Lydon,** in English and the humanities; **Walter J. Lisien,** in inorganic chemistry; **Ernest P. James,** in quantitative analysis; **Edward L. Golec,** in design and weaving; **Roger B. Oliver,** in cotton manufacturing; **Robert M. Kennedy,** in mechanical drawing; **Andrew A. Ouellette,** in mathematics.

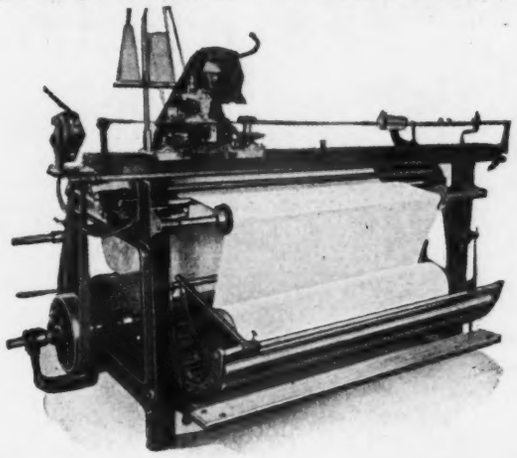
DR. A. FRANK TESI, who has been added to the staff of American Standards Association, New York. While engaged on work at Mellon Institute, he pursued graduate work in chemical engineering at the University of Pittsburgh and received his PhD degree in February, 1943. He has spent 13 years in testing, evaluating, and setting of standards for over 200 consumer products.

Dr. John H. Dillon has been appointed the research director of both the Textile Research Institute, New York, and of the Textile Foundation. He has resigned his position as assistant director of research of the chemical and physical research laboratories of Firestone Tire & Rubber Co., Akron, Ohio, where he has been continuously engaged since 1931, a part of the time as research physicist. Since 1937 he has been in charge of the physics research division and early in 1945 was made assistant director. He will be in direct charge of the Textile Foundation research program, formerly under **Dr. Henry Eyring,** and will supervise the institute research program which will continue under the direction of **Prof. John C. Whitwell** as association research director.

Walter Merlock has been appointed assistant plant manager of Concordia-Gallia Corp.'s narrow fabrics plant in Philadelphia. Since returning from the service, he has been in charge of the Fabric Development Department, and is succeeded there by **Joseph Vogl.**

NEW *Dinsmore*

Opening, Sewing and Re-rolling Machine



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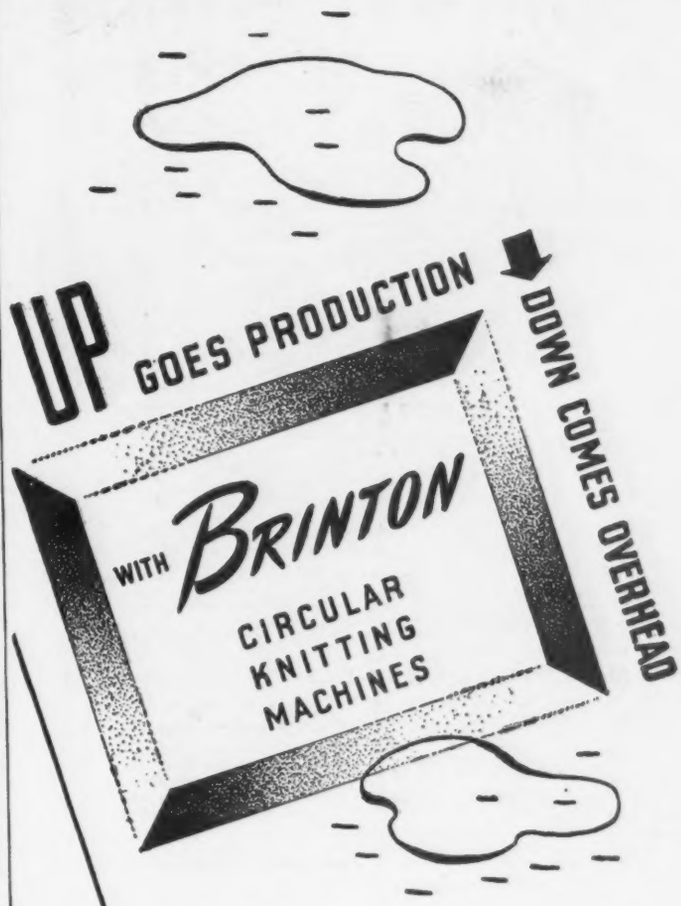

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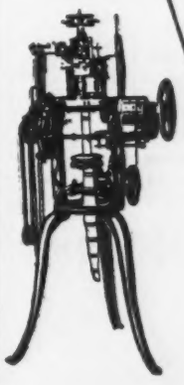

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NO POINTS TO BREAK OR MAR.
ACCURATE DOWN TO 0%

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RESISTANCE TINSEL CORDAGE
DECORATIVE TINSEL — LAME —
THREADS — CORDS — LAMINETTES
NOVELTY YARNS

NEWS ABOUT MEN

Lawrence G. Weston has been elected assistant vice president of Manville Fabrics, Inc., New York. He supervises the firm's cotton converting division.

Alfred J. Ernst, for many years head designer with the former Garfield Worsted Mills and for the last 12 years superintendent of the weaving division of S. Stroock & Co., Inc., Newburgh, N. Y., has severed his connection with that company.

Wallace W. Hoge has been appointed assistant treasurer of Celanese Corp. of America, New York. He joined Celanese in March, 1945 and prior to that was associated with Morgan Stanley & Co. for eight years.

C. Bagley Wright, formerly of Atlanta, Ga., has been elected a vice-president of Cannon Mills, Inc., Kannapolis, N. C., in charge of the four divisions.

Arthur M. Jones, assistant treasurer and comptroller since the Goodall Worsted Co. and Sanford Mills were consolidated to become Goodall-Sanford, Inc., in 1944, has been elected a director of the company to succeed **Frank M. Sugden,** who recently resigned because of his health.

Fred E. Wilcock has been named assistant treasurer and **Robert M. Tyler** has been appointed assistant sales manager of Athol Mfg. Co., Athol, Mass.

Lyle Stoddert, formerly associated with the American Woolen Co. at its Winooski, Vt., mills, has been appointed superintendent in charge of picking, carding, spinning, dressing, and weaving at the Woolwear Mill Co., Homer, N. Y.

Ray W. Schrimshire has become general overseer of opening, picking, and carding at Eagle & Phenix Mills, Columbus, Ga. Other appointments include those of **Charles Collins,** overseer of opening and picking; **D. B. Whaley,** foreman of opening and picking; and **A. B. Huckaby,** foreman of carding.

Walter Morlock has been appointed assistant plant manager of the Concordia division of Concordia-Gallia Corp., Philadelphia, Pa. The plant manufactures narrow fabrics.

Harry H. Purvis, recently appointed general manager of the Cornelia, Ga., plant of Chicopee Mfg. Corp., has been made a vice-president of the company.

R. G. Boyer, general superintendent of the Atlantic Mills division, Providence, R. I., of A. D. Juilliard & Co., Inc., has been named agent to succeed the late Everett E. Salisbury. He will retain his duties as general superintendent.

Marshall C. Rhyne has been named plant manager of Lola Mills, Inc., Stanley, N. C., succeeding **Claude L. Wyrick,** who resigned.

George E. Kennedy, southern division purchasing agent for Kendall Co., with headquarters at Paw Creek, N. C., has been transferred to the sales department of the company's finishing division at Walpole, Mass. His former duties have been taken over by **W. E. Prescott,** formerly purchasing agent for Walworth Co., South Boston, Mass.

Charles L. Keating has become agent and **Robert M. Bent, Jr.,** has become superintendent of Mountain Woolen Mills, Inc., Ludlow, Vt.

Frank Huff, secretary and treasurer, **George T. Adams,** controller, and **Hastings W. Baker,** assistant secretary, have resigned from the Tubize division of Celanese Corp. of America.

H. P .Mullins is now superintendent at Glen Raven Cotton Mills, Glen Raven, N. C.

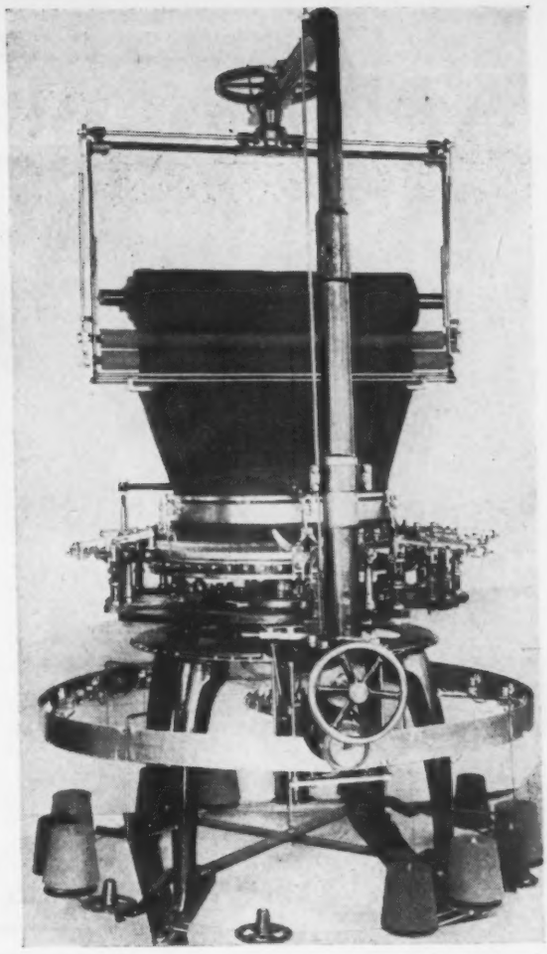
Paul Phair has resigned as boss finisher of Royal Woolen Co., Sabattus, Me.

Holmes Floyd has resigned as superintendent of Tallassee Mills, Tallassee, Ala., to become manager of Opelika Textile Mills, Inc., Opelika, Ala. He has been succeeded at Tallassee Mills by **J. Wilson Paterson,** who had been assistant superintendent.

Mark Sears, formerly of Moosehead Woolen Co., Corinna, Me., is now overseer of carding, and **Linwood Jones,** formerly of Anderson Mills, Skowhegan, Me., has become overseer of weaving at Park & Barston, Inc., Dexter, Me.

Raymond Rancourt was recently promoted to overseer of weaving at Lockwood Co.,

Single Head Spring NEEDLE Knitting Machine



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Charles F. Rogers, Jr.—Manager

Waterville, Me., and **Herbert Maheu** has been made overseer of spinning.

Leon Pearl has succeeded **John Ronco** as overseer of spinning at Dunbarton Woolen Mills, Dexter, Me.

Thomas Cashion, who has been with the production office of Cannon Mills, Kanapolis, N. C., for 12 years, will become associated with Washington Mills, Mayodan, N. C.

Floyd N. Smith, formerly with M. T. Stevens & Sons Co.'s Peacedale Mills, Peacedale, R. I., has joined Topsall Dyeing & Finishing Co., Inc., South Attleboro, Mass., as superintendent.

Albert Krall has been named superintendent of Wood Worsted Mill, Lawrence, Mass., a unit of American Woolen Co. He formerly held the same position with Talbot Wool Combing Co., Norton, Mass.

Doc Huggins recently took charge of standards and methods for Randleman Full-Fashioned Hosiery Mills, Randleman, N. C.

C. V. Hudgens has resigned as overseer of spinning for Kendall Co., Paw Creek, N. C., to accept a similar position with Hart Cotton Mills, Tarboro, N. C.

Mark Briggs has become head of the knitting department of Gurney Mfg. Co., Prattville, Ala.

J. L. Jewell has been named superintendent of Fairmont Mills, Inc., Fairmont, S. C. He succeeds **L. B. Gibson,** who has retired. Mr. Jewell was formerly superintendent of the Chesnee plant of Saxon Mills, Chesnee, S. C.

R. G. Reynolds is now superintendent of Anchor Mills, Huntersville, N. C. He succeeds **O. L. Wagstaff,** who has retired.

J. C. Tipton has resigned as superintendent of Waxhaw Cotton Mills, Waxhaw, N. C.

John D. MacAuley, Sr., has retired as foreman of the No. 2 spinning room of the Standard-Coosa-Thatcher Co. plant at Piedmont, Ala.

John E. Inness, formerly master mechanic at Greenhalgh Mills, Pawtucket, R. I., is now at the Brampton Woolen Co., Newport, N. H., in a similar position.

Obituary

Joseph Allen Skinner, 84, treasurer of William Skinner & Sons, Holyoke, Mass., died at Springfield, Mass., on Sept. 6. He held many directorates, and was widely known for his philanthropies.

Dr. Robert E. Rose, 67, of E. I. du Pont de Nemours & Co. and a leading figure in the progress of the American dyestuffs industry, died Sept. 23 in San Mateo, Calif. He was an ex-president of AATCC and director of Du Pont's dye laboratory for 23 years till his retirement in 1944.

William Choice Cleveland, chairman of the board of the Southern Weaving Co., and vice-president of Piedmont Mfg. Co., died at Greenville, S. C., Aug. 26. He formerly owned and operated the Brevard Cotton Mills, Brevard, N. C.

John G. Brodie, 59, vice president of McCampbell & Co., New York, died recently while vacationing at Lake George, N. Y.

Channing W. Souther, 63, Boston wool merchant, died recently at his home in Jamaica Plain, Mass. Mr. Souther served for several years as treasurer of the old United States Worsted Co. and of the Strathmore Worsted Mills. Later, he was sales manager for Arthur I. Darman Co. Last year he established the Souther Processing Co., Stoughton, Mass.

Thomas Gorham, 55, vice president of Bates Mfg. Co., Lewiston, Me., died Sept. 7.

Joseph Stroock, 77, who retired in 1929 as president of S. Stroock & Co., Inc., died recently in New York. Mr. Stroock was the son of the late Samuel Stroock, founder of the business.

John A. Hayes, 45, vice president and director of sales of International Braid Co., New York, N. J., died Sept. 2 at Quogue, L. I. He had been with the firm since 1922.

Mrs. Melody Jewel Carwile Wallace, 33, of Columbia,

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NEWS ABOUT MEN

S. C., president of the Carwile Knitting Mills, Chattanooga, Tenn., died at Georgetown, S. C., Sept. 9.

Allan Little, Sr., 71, one of Georgia's pioneers in the textile industry, and a graduate of Georgia Tech's first class in textile engineering in 1895, died Sept. 30, in Atlanta. He joined the Kincaid Mfg. Co., in Griffin, now Dundee Mills, in 1895, later becoming president of the company. He also erected Lowell Bleachery, South. In 1925, he was appointed agent for the J. P. Morgan interests and became president of Dwight Mfg. Co., Gadsden, Ala.

Samuel R. Glassford, 72, retired president of the old selling house of Bliss, Fabyan & Co., New York, died late in September. He was president of Association of Cotton Textile Merchants of New York for several terms.

William E. Park of Nashville, Tenn., died Sept. 2. He was president of Belle Meade Hosiery Mills and Park Textile Co., and vice president of Golden Art Hosiery Co.

Andrew Gair Blue, 49, for several years vice president and manager of the Fontaine Converting Works, Inc., Martinsville, Va., died recently.

Henry Joseph Brook, 66, president of Brook Woolen Co. for the last 18 years and owner of Simcoe Wool Stock Co. which he sold in 1944, died recently at Simcoe, Ontario.

John H. C. Church, 76, chairman of the board of Monument Mills, Housatonic, Mass., and a director of the Union Trust Co., Springfield, Mass., died Sept. 3. He had been associated with Monument Mills for more than 50 years.

Harry S. Morgan, 52, vice president of James Lees & Sons Co., Bridgeport, Pa., died recently at his summer home in Ocean City, N. J.

W. Maxwell Moore, 61, died at his home in Wilmington, Del., Sept. 13. He was formerly vice president of the Du Pont Rayon Co. and was associated with Du Pont for 44 years until his retirement in 1944.

William Streuli, 59, a member of the Atwater Throwing Division of Hess, Goldsmith & Co., died recently at his home in Larchmont, N. Y.

Charles A. Laube, 57, vice president and founder of Cliffside Dyeing Corp. Paterson, N. J., died recently. He was secretary of the Ultra Chemical Works, in Paterson, from 1930 to 1940, when organized the Cliffside company.

Everett P. Curtiss, 93, one-time owner of Hitchcock & Curtiss, knitting firm, died at Norfolk, Conn., recently.

James E. Ford, 71, Belmont, N. C., secretary-treasurer of Linford Mills, Inc., of Belmont, died Sept. 18.

J. Gordon Holt, formerly general manager of Aberfoyle Mfg. Co., Belmont, N. C., died recently in Melbourne, Australia. Mr. Holt went to Melbourne to establish a plant there for the Aberfoyle company, about five years ago.

Walter T. Bunce, 63, who for the last five years served in Charlotte, N. C., as Southern manager for Arnold Hoffman Co., died Aug. 28 in East Greenwich, R. I.

Harry J. Kaufmann, 59, purchasing agent with Narrow Fabric Co., "Wyomissing," Reading, Pa., for many years, died recently.

Paul L. Borden, 66, secretary and treasurer of Borden Mfg. Co., Goldsboro, N. C., died recently.

George R. Williams, 65, treasurer of Chandler Oil Cloth & Buckram Co., Taunton, Mass., and Chandler-Palruba Co., of New Jersey, died in Taunton, Aug. 23.

John Bennett Cornwell, 45, for many years superintendent of Republic Cotton Mills No. 3 plant, Great Falls, S. C., died Sept. 18.

Donald S. McClain, 50, of Atlanta, Ga., for many years active in the operations of the Atco Mills, Cartersville, Ga., which were owned and operated by his father, died Sept. 7.

Harry F. Wynn, 69, retired superintendent of the Mandeville Mills, Carrollton, Ga., died recently.

Arthur Bower, 70, overseer of weaving at Ayer Mills of American Woolen Co., Lawrence, Mass., for 28 years, died last month. He was born in Bradford and came to this country when 10 years old.

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Managers for underwear mills (two).
Worsted yarn supts., one for Bradford, one for French System.
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Managers screen printing plants (two).
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Overseers stitching, cutting and finishing knitted and woven goods.
Overseers cotton and woolen spinning.
Supt. wool dusting and blending.
Superintendent, boss carder, boss spinner and card grinder Texas cotton mills.
Master mechanics and plant engineers.
Woolen and cotton mill carders $65.-$100. week (several).
Manager waste business.
Supt. dyeing, bleaching, mercerizing (China).
Knit goods designer, spring and latch needle machine mill (Canada).
Boss dyers for rayon, cotton and acetate piece goods, yarns, warps, etc. (Several).
Designer narrow fabrics (Webbing).
Woolen carders, 2nd and 3d shift for Pacific Coast mill.
Woolen dyer raw stock and pieces.
Hosiery fixers and foremen.
Carder to erect one set of cards and take charge permanently $75 for 40 hours; 10 hours overtime at time and half.
Chemist and dyer knitted and woven goods (South).
Wool-shoddy salesman, Mid-West and Southern territory.
Assistant mechanical engineer experience in steam power design.
Engineer and sales mgr. for textile oils $10,000-$15,000 year.
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Time study men.
Perchers, card grinders and many others.
Fixer for Draper and Crompton & Knowles latest model looms on cotton goods for Chile. Every opportunity to become overseer of weaving in short time. Splendid salary, contract given for two or three years and very attractive salary.
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A first class New England woolen mill-manufacturers of high grade goods wants to engage an expert finisher, an expert dyer, and an expert examiner. Only those who have held similar positions in a first class mill may apply.

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Take full charge of repair and rebuilding textile dyeing equipment. Excellent opportunity for individual with good background and experience.

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Conversant with Screen print production. Preferably with colorist background. Exciting opportunity is offered with large company.

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P-850, Textile World
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DESIGNER AND Assistant Superintendent wanted for 65 loom plant located in Maine. Must be young man, ambitious and industrious. Good chance for advancement. P-826, Textile World, 330 W. 42nd St., New York 18, N. Y.

COTTON MILL Superintendent. Mill in Toronto, Ontario, requires the services of an experienced cotton mill superintendent to take charge of production from opening to spinning. Good opportunity with well known company. Reply stating age, experience, and full particulars to P-860, Textile World, 330 W. 42nd St., New York 18, N. Y.

SEWING MACHINE fixer wanted by large upstate New York underwear manufacturer. State experience. All correspondence confidential. P-861, Textile World, 330 W. 42nd St., New York 18, N. Y.

BOSS CARDER for second and third shift wanted for first-class woolen mill located in New England. P-862, Textile World, 330 W. 42nd St., New York 18, N. Y.

MAN thoroughly familiar with Textile Mills Operations, must know Textile Plants from bottom up, must be capable of directing and supervising Inventory work and free to travel. State qualifications, past experience and salary. P-863, Textile World, 520 N. Michigan Ave., Chicago 11, Ill.

TEXTILE SCHOOL Graduate with some experience by a fast growing Textile Machinery firm in New York City. State experience and salary required. P-872, Textile World, 330 W. 42nd St., New York 18, N. Y.

POSITIONS WANTED

AVAILABLE MANAGER, superintendent, designer, twenty-five years experience from fleece to piece. Woolen or worsted, yarns or cloth. Men and women's wear. Presently employed in the Middle East. Textile college education, seeks new position. PW-834, Textile World, 330 W. 42nd St., New York 18, N. Y.

TECHNICAL ASSISTANT to plant manager. Capable of handling development of new methods and processes in greige mills and finishing plants. Experience includes cotton, wool silk, and synthetics, on yarns, cards and fabrics. PW-835, Textile World, 330 W. 42nd St., New York 18, N. Y.

WEAVING SUPERVISOR: Textile School graduate, age 31, 13 years of practical experience in weaving of woolen and worsteds. Thorough knowledge of C & K automatic and box looms. Presently employed desires change. PW-874, Textile World, 330 W. 42nd St., New York 18, N. Y.

ENGLISHMAN, 39, married, in charge large cotton mill in India wishes obtain position as Manager in U.S., South America. College-trained, 4 years experience with well-known machinists, 7 years in charge research plant of large Cotton Research Institution, followed by 9 years experience in the East. Used to poor labor, latest methods processing combed carded single and doubled yarns. Can produce excellent references. Free early 1947. PW-865, Textile World, 330 W. 42nd St., New York 18, N. Y.

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DYEING, PRINTING AND FINISHING

Thoroughly experienced in plant management, processing and production, full knowledge of all equipment and its operation, desires new contact where knowledge and ability can be used to full advantage. Interested in new projects or reorganization of present set-ups.

PW-800, Textile World
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COTTON MILL

We are looking for an energetic, ambitious young man with a good education and experience in the operating of a Cotton Spinning Mill. The position of Cotton Mill Superintendent is open. Apply giving full particulars as to your experience, age, education and your present salary to

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PLANT MANAGER

with Print Plant experience to take charge of large screen printing plant in New England. State age, education, previous experience and salary desired. All replies confidential.

P-845, Textile World
330 West 42nd St., New York 18, N. Y.

POSITIONS WANTED

BOSS DYER desires change. Age 46, married, very wide experience on wool, cotton, and rayon, piece dyes stock and yarn. PW-873, Textile World, 330 W. 42nd St., New York 18, N. Y.

OVERSEER WEAVING desires job in New England states can furnish good reference. Several years experience. Sober and efficient. Write PW-866, Textile World, 330 W. 42nd St., New York 18, N. Y.

OVERSEER of Woolen and Worsted weaving wishes to make a change. First class man on both C.K. Automatic and 4x4 Box Looms. Ten years experience as Loom Fixer. Textile School graduate. Can furnish good references. PW-867, Tetile World, 330 W. 42nd St., New York 18, N. Y.

SILK AND RAYON fabric expert. Practical mill man, with 20 years experience in fabric analysis, styling, cost calculation, mill supervision and converting seeks connection with manufacturer or converter. PW-868, Textile World, 330 W. 42nd St., New York 18, N. Y.

TEXTILE CHEMIST available with twenty-three years' experience in cotton and rayon piece goods dyeing and finishing. Age forty-eight, unmarried. Able to take charge of laboratory. College degree. Prefer Philadelphia area. PW-869, Textile World, 330 W. 42nd St., New York 18, N. Y.

EXPERT in cotton spinning with wide experience in Argentina and Peru, working with European and American machinery—knowledge of high stretching Casablanca system—wants to obtain position. Any location. References certified. J. Monks, 1330 Morris Ave., Bronx, N. Y.

OVERSEER of Weaving or assistant superintendent. Textile school graduate. 22 years experience woolens and worsteds. Expert automatic loom-fixer. Age 38. PW-877, Textile World, 330 W. 42nd St., New York 18, N. Y.

TOE-HOLD Wanted. Young man, veteran, alert, ambitious, not afraid of hard work wants position in textile field with opportunity to learn. PW-876, Textile World, 330 W. 42nd St., New York 18, N. Y.

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EXPERT SEEKS representation of spinning, knitting, Textiles machines, and supplies for Belgium. Ehrhart Georges, 16 rue St. Vincent de Paul, Jette, Bruxelles.

MILL REPRESENTATION—Young progressive organization desires to represent Mills or Manufacturers as sole agent or distributor for New York City area. Maxwell Sommer & Company, 489 Fifth Ave., N.Y.C. MUrray-Hill 2-2492.

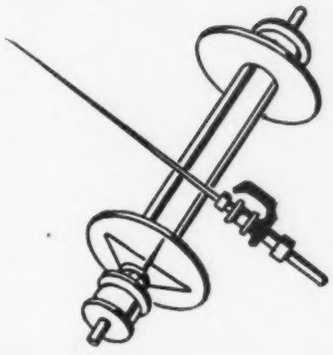
PRESENTLY EMPLOYED in eng. dept. of large textile concern, desire connection on sales eng. or representative in Western Europe, thoroughly familiar with territory, language, trends and possibilities, accustomed to deal with all kinds of people and situations. RA-864, Textile World, 330 W. 42nd St., New York 18, N. Y.

WANTED

"THE TEXTILE EDUCATOR" By I. Mills. Used or new. Write to Paul Gregory, 843 Barry, Chicago 14, Ill.

WANTED USED Singer 32-64, or similar Sewing Machine, Hand or Motor driven. J. M. P., 25 S. Huntington Ave., Boston, Mass.

Additional Employment Ads on page 268, Business Opportunity Ads on pages 268 & 270



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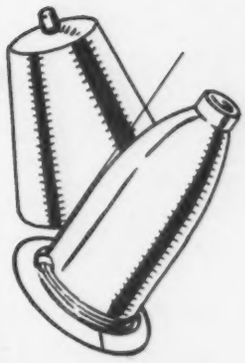
Quality



SURPLUS TEXTILE EQUIPMENT OR TEXTILE MILLS

for the manufacture of

COTTON • WOOL • WORSTED • SILK • RAYON

"FROM RAW MATERIAL TO FINISHED PRODUCT"

Through many years of supplying quality textile equipment to the domestic and export markets, this Company has established a reputation which brings us a constant flood of inquiries for used equipment, enabling us to make worthwhile buying offers and to assure rapid handling of all transactions from a single machine to a complete mill equipment!

Send MLC *your List today*

MACHINERY LIQUIDATING COMPANY

OPA REGISTRATION NUMBER 709

EST. 1923

31-33 West 42nd Street MLC NEW YORK 18, N. Y.

DOMESTIC TELEPHONE PEnnsylvania 6-8014 EXPORT

SPECIALISTS IN SELLING AND PURCHASING TEXTILE MACHINERY, ACCESSORIES AND MILL SUPPLIES

MACHINERY LIQUIDATING COMPANY

SURPLUS EQUIPMENT — OR MILL

MLC A QUICK MARKET FOR YOUR

COTTON-TEXTILE SALES EXECUTIVE

AVAILABLE AS RESULT OF MILL SALE

Broad experience with prominent selling houses in styling, advertising, and promoting. Working knowledge of manufacturing and finishing.

SA-853, Textile World
330 West 42nd St., New York 18, N. Y.

TEXTILE PROCESSING EXPERT

with a successful record in
DYEING, PRINTING and FINISHING
rayon and cotton fabrics
desires position.
Can deliver maximum production
of the highest quality
by developing unusual skills
with the fullest cooperation
of all operating personnel

PW-847, Textile World
330 West 42nd St., New York 18, N. Y.

Mr. Manufacturer:

Let us sell your line in the Southeast on commission. We try to see the trade every 90 days. We are reliable.

W.L.S.-RA-841, Textile World
330 West 42nd St., New York 18, N. Y.

SPINNERS PLAN AHEAD!

Reputable Philadelphia selling agency is available to a spinner of worsted woolen, or blended yarns on commission basis. Excellent reputation, background, experience, and connections.

RA-856, Textile World
330 West 42nd St., New York 18, N. Y.

LET'S TRADE!

We have
Spinning capacity
for wool yarn—
in oil on cone—
1 to 2.1 run

We need
Carded cotton
knitting twist on
cones
12/1-30/1 natural

The ADLER Co.
Cincinnati 14, Ohio

FOR SALE

COMPLETE PLANT

for
WEAVING BURLAP
& OPEN MESH CLOTHS

FS-846, Textile World
330 West 42nd St., New York 18, N. Y.

WANTED

MANUFACTURER

To make a patented knitted diaper for us. Requires tubular knit cotton cloth 9" or 10" wide from 16-1 yarn, over-edging, and 2-needle sewing machines. Plenty of orders on hand.

BO-855, Textile World
520 North Michigan Ave., Chicago 11, Ill.

PROFESSIONAL SERVICES

FABRIC DEVELOPMENT CO.
Consulting Technologists
Design of textiles for specified uses
Product improvement and standardization
Cloth analysis, layouts, and weaving drafts
Specifications for raw and finished materials
Surveys and reports
P. O. Box 326 Times Sq. Sta. New York 18, N. Y.

LANCASTER, ALLWINE & ROMMEL
Registered Patent Attorneys
Suite 448, 815-15th St., N. W. Washington 5, D. C.
U. S. and Foreign Patents Secured.
Trade-marks and Copyrights Registered.
Searches made to determine Patentability and Validity.
Patent, Trade-mark and Unfair Competition Causes.

PHONE: 166 MORRIS MALINOW, Owner

CAROLINA CONVERTING MILLS CO.
COMMISSION WEAVING AND WINDING
WE CAN REWIND AS MUCH AS FORTY OR FIFTY THOUSAND LBS. YARN WEEKLY.
P. O. BOX 291 BLACKSBURG, S. C.

YARNS WANTED

Wanted to purchase surplus yarns of all types — cotton, rayon, acetate, nylon, silk, wool, spuns, and blends.

W-474, Textile World
330 West 42nd St., New York 18, N. Y.

MODERN ENGINEERING CORPORATION
Consulting Engineers
Industrial Power Surveys—Electric, Steam, Water, Air Layouts—Heating & Ventilating—Special Electric Circuits—Plant Modernization—Alterations—Power Surveys—Investigations & Reports.
Inquiries Invited
154 Nassau St., New York 7, N. Y.

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DIRECT TO PRINCIPALS.
WE ACT IN OUR OWN BEHALF AND IN THE STRICTEST CONFIDENCE

CASH

IN LARGE SUMS AVAILABLE FOR QUICK . . . .
PURCHASE
(OF ASSETS OR CAPITAL)
- *Industrial Plants*
- *Manufacturing Divs.*

OR UNITS

Address:
Box 1222
147 W. 42 St., N. Y. 18, N. Y.

WANTED
Surplus
Chemicals, Dyes, Gums, Oils, Waxes, Greases, Pigments, Residues, By-Products, Wastes

W-270, Textile World
330 West 42nd St., New York 18, N. Y.

THERMO-DYNAMICS, INC.
Plant Modernization
Industrial Heating, Drying,
Ventilating and Baking Equipment.
Designing, Engineering, Installation & Supervision.
Your Inquiries Solicited
110 E. 42nd St., New York 17, N. Y. LE. 2-1270

DYESTUFFS

Will buy your surplus and obsolete dyes and chemicals for cash.

NEW ENGLAND PRODUCTS CO.
91 Oliver St. Boston, Mass.

WATSON and HART
Engineers
Industrial Plants, Foundations and Soil Studies. Mechanical and Electrical Installations, Overhead and Underground Electrical Distribution, Water Works and Sewerage.
Designs, Reports, and Appraisals.
216 W. Market St. Greensboro, N. C.

Additional Wanted Advertising on pages 270 and 276

His genius originated the world's first complete Cotton Mill . . .

THIS is the only known likeness of Mr. Francis Cabot Lowell of Newburyport, Mass. He became convinced that cotton manufacturing, then monopolized by England, might well be done in America. So he went to England and Scotland in 1811 and succeeded not only in seeing their closely guarded machines, but got a sufficiently clear idea of their construction to enable America to build them! For months Lowell experimented, until the first practical Power Loom was completed. On February 2nd, 1816, his Waltham Mill produced the first cotton cloth ever made in the world by power, with the whole manufacturing process under one roof. Lowell's efficient system of operating a textile mill and selling its products has continued to this day as the best known method.

MACHINERY LIQUIDATING COMPANY

QUALITY TEXTILE EQUIPMENT

SERVING THE TEXTILE INDUSTRY

—Batchers or Rolling up machines, 60", 65", 70"
—#100 Sturtevant Blowers, paddle type
—C&M 2-cylinder Brushing machines, 62½" and 72"
—Button Breakers, 2-48", 1-50"
—48"x60" Bridesburg Card Set, 2 cylinders, wood
—48"x48" Furbush & Gage Card Set, 3 cylinders, wood
—48"x48" D&F 3-cylinder Card Sets, 2 jack spools, 24 ends, rebuilt
—100 spindle #25 Foster Doubler, with 5 HP motor
—6-delivery H&B Drawing Frame
—Set 20 H.W. Butterworth 108" Dry Cans, dryer, motor driven, with Reeves drive
—Reeves Drive, Range 3-1, Size 6, Class G
—Reeves Drive (small)
—72" Schofield Automatic Duster
—54"x54" Batch Type Waste Duster
—6' Sargent Cone Duster with fan
—26" Tolhurst Extractors, belt driven
—30" American Laundry Extractor
—40", 48" and 60" Tolhurst Extractors
—45" Dobson & Barlow Cotton Feeder
—40", 42" E&H Flat Folders with take-up stands
—66" Folder (ceiling or machine)
—100" C&M Flat Folder, motor driven with hydraulic lift and roll-up stand
—Rodney Hunt M-3 2-string Fulling Mill
—#7 Hunter 2-string Fulling Mills
—48"x21" Smith & Furbush Garnett
—49"x20" James Smith Garnett
—40", 48", 60", 80" Card and Napper Grinders
—Peerless Belt Lacing Machines
—Card Lacing Machine with ½ HP Ind. Motor

2—45½" C&K 4x1 non-automatic, motor driven Looms with silk rool take-up
120—45½" reed space Modified E Draper Looms with lacey tops, 3 bank stop motions, worm take-up, belt driven
32—45½" reed space Draper Model # and Hopedale Automatic Looms, 20 harness, belt driven
1—48" C&K 4x4 box Loom, 25 harness, belt driven, friction clutch
54—54½" reed space C&K 4x1, 2x1, 1x1 Looms, 20 and 25 harness, belt driven
60—80" and 82" C&K 2x1 automatic Looms, 8 harness cam motions, motor driven
2—82" (1 Union) and (1 McCloskey) 4x4 Box Looms, 25 harness, friction clutch drive
3—92" C&K 4x4 Box Looms, 25 harness, friction clutch drive
1—44" C&M Measuring Machine, 60 yd. dial
1—64" P&W Measuring and Woolen Cloth Winder
1—66"x23" P&W 60 yd. Measuring Machine, sanded roll, belt driven
1—66"x24" P&W AWC Measuring and Folding Machine, 100 yd. counter and folder
1—12 Pole Smith Drum Skein Mercerizer
1—300 spindle J&B Mule, 2" gauge, 10 jack spool drums
2—240 spindle D&F 2" gauge, 10 jack spool Drums
100—New Leland 1 + HP 3/60/220V Heavy Duty Motors
Also various size Rebuilt Motors
1—61" Woonsocket 2-cylinder Napper, 20 rolls to each cylinder, gear driven rolls
1—72" P&W 20 roll Single Acting Napper
5—80" D&F 20 roll Single and Double Acting Nappers

1—30x30" Mezzera Wool Opener with grid and 25" feed apron, wire good
1—45" 2 roll Padder, rubber rolls
1—42" Olsham Fearnaught Picker
1—42" D&F Fearnaught Mixing Picker
2—48" Parkhurst Burr Pickers with blower
2—48" C.D. Sargent Burr Pickers
1—54" Werner Single Color Printing Machine
7—52", 65½", 66" and 98" Voelker and Gessner Single and Double Bed Rotary Cloth Presses
3—50 spindle Carpenter 54" Skein Reels, 1 adjustable and 2 non-adjustable
1—60" P&W Single Blade Smooth Woolen Shear
1—60" C&M Single Blade Plush Shear
2—60" and 66½" P&W Single Blade File Tooth Woolen Shears
2—66½" P&W Single Blade Woolen Shears
11—65½" P&W 2-blade Shears, Model B
1—66" P&W 2-blade Shear, Model A
4—76" C&M Single and Double Blade Shears
1—42" C&M Singer with hood
1—32½" D&F Jack Spool Winder
1—100 spindle Whitin Spooler with Foster Tensions, McCall Guides
1—Pair 28"x12½" Iron Squeeze Rolls with feed apron
1—60" C&M Single Brush Tiger
22—156 spindle S&L Tape Driven Twisters, 3½" ring, 5" gauge, belt driven
2—(1-100 and 1-200) spindle Lowell Trap Twisters, 3½" ring, 5" gauge
1—Washing Tub Agitator with motor
5—100 spindle Foster Model 12A Tube Winders
2—60" P&W Winders with stencil attachment

QUANTITY OF MULE BOBBINS AND VARIOUS SIZE TWISTED BOBBINS AND WOODEN SPOOLS.

MACHINERY LIQUIDATING COMPANY

OPA REGISTRATION NUMBER 789

EST. 1923

31-33 West 42nd Street NEW YORK 18, N. Y.

DOMESTIC TELEPHONE PEnnsylvania 6-8014 EXPORT

SPECIALISTS IN SELLING AND PURCHASING TEXTILE MACHINERY, ACCESSORIES AND MILL SUPPLIES

THE MARKET PLACE FOR HIGH

ATTENTION INDUSTRIALISTS

Are You Caught in the Floor Space Shortage?

We Have 50,000 Square Feet

Available By

November 15th

We have under construction four industrial buildings of 12,500 square feet each, available for lease as separate units, or two or more of them can be tied together into larger units. Construction completion date: November 15th. These buildings are on the main line of the Southern Railroad at:

GASTONIA, N. C.

In The Piedmont Carolinas . . .

Gastonia is served also by the Piedmont & Northern and Carolina & Northwestern Railroads and is located on U. S. Highways 74, 29 & 321. For full information write Mrs. Sarah M. White, Executive Secretary, Gastonia Industrial Diversification Commission, 321 Commercial Building, Gastonia, N. C.

YOUR INQUIRIES HANDLED PROMPTLY

WANTED

DUBIED, SEIFERT & DONNER and GROSSER WIDENING MACHINES

6, 7 and 8 gauge.

Write to

W-730, Textile World
330 West 42nd St., New York 18, N. Y.

WANTED

ATWOOD DOUBLE DECK UP TWISTERS

State number of machines, spindles per machine and year of manufacture

Write

W-857, Textile World
330 West 42nd St., New York 18, N. Y.

WANTED

LOOMS

About 20 W-3 heavy looms to weave Plastic Upholstery fabrics. Interested party may get all information on this new type fabric, which can best be woven on W-3 looms. Machines must be 72 inches reed width.

How to manufacture this type fabric on such looms would be taught to interested party. This is a fabric of the future, and will give steady work for years to come. Write

W-843, Textile World
330 West 42nd St., New York 18, N. Y.

WANTED

S. S. DYE KETTLE

8 or 10 foot stainless steel dye kettle.

LOOP DRYER

Capacity 100 pieces tubular knit goods daily.

W-852, Textile World
330 West 42nd St., New York 18, N. Y.

WANTED

CONE REDUCER

10 x 5 worsted cone reducer

MERRIMAC MILLS COMPANY
Methuen, Mass.

WANTED

FRANKLIN PROCESS

Package Dyeing Machine. Capacity 300 to 500 lbs. Must be in good operating condition, and complete with motor and pump. If possible the motor to be 60 cycle, 550 volt.

W-858, Textile World
330 West 42nd St., New York 18, N. Y.

WANTED

#45 Universal winder single spindle machines suitable for winding twine and cordage on large tubes 10" Traverse and 12" Diameter.

Write

P. O. Box 493, Pawtucket, Rhode Island

GOING ... like a house afire

SURPLUS TEXTILE MACHINES

INDUSTRY WANTS YOUR IDLE MACHINES NOW

RUSH YOUR LIST TO "Consolidated"

A SINGLE ITEM OR A COMPLETE PLANT

4—Multi-color Print Machines, 8-11-12 colors.

EXTRACTORS

4—K & G & Burkhardt 60" Extractors, rubber baskets
1—Hercules 48" Extractor, copper basket.
3—26" & 30" Hercules Extractors
1—V.V. 42" self Balancing Extractor with motor.
2—Gessner 72" & 50" Vacuum Extractors.
3—Tolhurst 48" & 36" Open Top Extractors.
1—Tolhurst 60" underslung motor driven Extractor.

DYEING MACHINES

3—K. & W. Obermaier & Buhlmann skein dyers.
1—Sargent 3-bowl scouring train, 48" bowls.
3—Yarn scouring & dyeing machines, all stainless steel.
1—Obermaier Package Dyer, complete with pump, etc.

DRYERS

1—P. & S. 4-unit 8' Multipass Airlay Dryer.
1—National Loop Dryer, 6 fans, 86" wide.
1—Heathcote Pin Tenter Dryer.
2—3-Apron Conveyor Dryers.
1—Hunter High-Speed Rotary Tenter Dryer.
2—P & S Raw Stock Dryers.
1—Van Vlaanderen Net Dryer.
1—P & S Multipass Conveyor Dryer.
1—P & S 2-section skein dryer.

NAPPERS

2—D & F Single Acting Nappers, 60" & 84".
2—Woonsocket 86" 20-roll S.A.B.B. Nappers.
1—Woonsocket 86" 24-roll D.A.B.B. Nappers.

TENTER FRAME

1—Butterworth 90' Tenter Frame, 50".

PALMERS-PALMER QUETCH UNITS

1—Textile 66" Low type Palmer.
1—V.V. 88" Palmer Quetch Unit
1—General Machine Co. Palmerette.

COATING MACHINES

1—Butterworth coating machine with drying cylinders.
1—Textile 60" Coating Unit with geared pump.
2—Knife Coating machines, 64".

BEAMERS - BATCHERS

5—Textile 50", 60", 66" & 72".
4—2-roll B.B. Batchers, 50"-72".

WASHER

1—Rodney Hunt Rope Washer.

Narrow Fabric Equipment consisting of: Washer, 2 kettles, 3 stainless steel cans.

Complete Sargent 4-bowl scouring unit with dryer & duster.

CALENDERS

1—Grand Rapids Calender, 46½".
1—Butt, 3-roll 55" Calender.
1—Textile Fin. Co. 150" 2-roll Calender.
1—C. & M. 2-roll 60" Calender.
1—3-roll Ribbon Calender.
1—K & G 3-roll 60" Finishing Cal.
1—Farrell 4-roll Calender.

SHEARS

3—P & W 2 Blade Shears 66½".
1—P & W Single Blade Shear 60".

DYE BECKS—DYE JIGGS

3—V. V. 4' stainless steel lined dye becks. complete with motors and drives. New all S.S. Dye Becks, 4'20' long.
4—60" S.S. Dye Jiggs.

complete knitting plant.
complete Hosiery Dye. & Fin. Plant.

PRINT MACHINES

2—R.B. & F. 3-color Print machines, 40".
2—R.B. & F. 5 & 7 color Print machines, 40".
1—Single Color Print Machine, 60".
1—Werner 54" Single Color Print Machine.

WEAVING MACHINES

20—C & K heavy duck Looms, 76".
30—C & K 2 x 1 looms, 68".
55—C & K Jacquard Looms, 48".
5—C & K Carpet Looms.
25—100" & 110" Blanket looms with motors.
10—Draper "D" 72" Automatic Looms.

TUBERS & MEASURING MACHINES

3—Tubing & Measuring Machines 50"-60".

KNITTING MACHINES

Lot of Hosiery Knitting Machines.
Lot of Outerwear Knitting Machines.
Lot of Wildman, S & W, & H & Leighton machines.
4—Dubied & C & F machines.
Lot of Cooper Spring Needle machines.

PREPARATORY MACHINES

1—40" Fearnaught Picker.
1—Woonsocket Single Beater Breaker Picker.
4—Shoddy or Rag Pickers.
1—Whitin 40" Finisher Picker.
30—56" Fisher automatic Feeds.
3—C & M 40" & 42" Fearnaught Pickers.
1—Process Opening & Cleaning Unit.

CARDING MACHINES

1—D & F 2-cylinder 48"x60" Card with Bramwell Feed.
2—Sets 3-cyl. D & F 48" x 48" All Iron Cards.
1—D & F 60" Card Breaker.
2—Kitson & Bates automatic Hopper Feeders.
1—Bramwell 72" Feed.

SPINNING & WINDING MACHINES

11—Davis & Furber Mules 2¼" gauge.
40—Whitin Spinners, 204 spindles, 4" gauge.
1—Davis & Furber Compressor Spooler.
12—#90 Universal Winders, for silk operations.
1—Sipp 80 spindle Winder.
4—Eastwood Skein Winders, 44" to 60" skeins
4—Payne & Huse Winders.
3—Sipp Eastwood Skein to spool Winders, 100-200 sp.
4—Collins Novelty Twisters.

BUTTON BREAKERS

2—V.V. 60" & 50" Button Breakers.

TWISTERS

5—Brownell Twisters, 48 to 96 spindles.
9—Whitin Twisters, 200 spindles, tape drive.
1—D & F 60 spindle Twister, 3¾" gau.
30—F & J Twisters, tape driven, 4½" ring.

"AMERICA'S BEST BUYERS" WANT YOUR IDLE EQUIPMENT

SINGLE ITEMS TO COMPLETE PLANTS

SEND YOUR LIST NOW

THE KEY TO SAVING TIME AND MONEY

CONSOLIDATED PRODUCTS COMPANY, INC.

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TEXTILE DIVISION, PATERSON 2, N. J.

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15 PARK ROW • NEW YORK CITY 7 • N. Y.

100,000 LBS.
ORIG. CASE
FIBERGLASS
225-2-5

YARN!

FOR IMMEDIATE DELIVERY . . . .

8—C & K 52" 4x1, 25 Dobby, ¾ H.P. Motor Drive. 1923 Model.

24—C & K 52", 4x1, 30 Dobby, ¾ H.P. Motor Drive. 1923 Model.

10 Narrow Fabric Looms
Motorized Schaum Uhlinger 15' 8" Looms, 16 Space Battens, Cam Motion

3—Scranton Duplex Motorized 5-BS

1—Mertz Yarn Box Complete With Pump and motor

6 #50 Universal Coners
6 Spindles each—for Cotton Winding — Machines in Excellent Condition

1—Gates-Pfeifer Motorized Soaking Machine for Silk 1 Bale Cap.

1—Franklin Silk Soaking Machine Motorized—1 Bale Cap.

SILK AND RAYON WINDERS

3—Atwood Double Deck Winders....140 Spindles Each
3—Sipp Double Deck Winders.....120 Spindles Each
4—Eastwood Double Deck Winders..256 Spindles Each
1—Eastwood Single Deck Winder... 60 Spindles

LARGE QUANTITIES OF RAYON & SILK SPOOLS

400,000 Fibre Head 3½" Traverse, 2½" Head
41,000 Fibre Head 5" Traverse, 2⅝" Head
20,000 Fibre Head 4" Traverse, 2⅝" Head
25,000 Fibre Head 3⅜" Traverse, 2½" Head
100,000 Fibre Head 3⅜" Traverse, 2¼" Head
50,000 Fibre Head 3½" Traverse, 2¼" Head
10,000 Fibre Head 4¾" Traverse, 3½" Head
50,000 Metal Head 3⅝" Traverse, 3" Head
20,000 Metal Head 4" Traverse, 2⅝" Head
3,500 Bakelite 7" 5 B Spool, 3" Head
10,000 T Hole 5 B Spin 4", 3" Head
12,000 5 B 4", 2⅜" Head
3,500 Stainless Steel Steaming Shafts 3¼" Traverse, 3¼" Head

And Many Others Too Numerous to List

15 MILTON PAPERLESS BEAMS

54"-20" Flanges—Thread Type—in Excellent Condition

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Wm. Rabinowitz & Sons

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214-222 HAMILTON STREET · ALLENTOWN, PA.

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FOR SALE

Warper Beams 24" and 25" CI and Wood heads.
1—#5 Class A Reeves Var. Speed Transmission.
1—Obermier pkg. Dye Machine with stainless steel carrier, open top, wool or cotton, 400 lbs.
Motors—3 phase, 60 cycle, 220 volts, 3-5-10 HP
1—2 roll Starch Padder 45"—2-35"x41" Size Kettles
1—set of 25 copper Dry Cans Hor. 42"
1—Ceiling Folder—1 3 Bowl Friction Calender 42"
1—E&H flat Folder 42"

Direct Factory Agents

WALTER L. PARKER BOBBIN & SPOOL CO.

BTS

BAY STATE TEXTILE CO.
220 HARTWELL STREET · FALL RIVER, MASS.

FOR SALE

Woolen & Worsted Supplies

1,000—Roving Spools—9x5
15,000—Automatic Loom Bobbins—8¾"
200—Drawing Spools—14"x7"
100,000—Mule Bobbins, 8¾"
2,200—Rabbeth Modern Spinning —Spindles, Tape Drive, Clutch.
75—Shuttle Boxes, 4 Cell #149 C&K.
50—Fibre, Boxes, 20"x13"x11"
168—Regular C&K #4 Feelers.
Lot of 4 Cell, C&K Magazine Parts.

L. J. McCAFFREY & SON
P. O. Box 495 Pawtucket, R. I.

KNITTING MACHINERY
For Full Fashioned & Seamless Hosiery
Underwear & Outerwear Mills
A complete line of
Dyeing & Finishing Equipment.
Write for Catalog TW

MORRIS SPEIZMAN CO., Inc.
506 West 5th St. Charlotte 1, N. C. Phone 3-1894

2—#50 UNIVERSAL TUBERS Motor-Driven Reconditioned
2—NET DRYERS
2—QUETCHES (Motor Driven)
1—BEAMER (Motor Driven)
2—MEAS. & TUBING (Motor Driven)

A. & M. BLANK CO., INC.
49 State St. Paterson, N. J.
Sherwood 2-1367 Lambert 3-9523

FOR SALE

Repeaters, Lacers Card Cutters Jacquards of all description, also Plush Jacquards

EUGENE SECKLER
96 N. 7 St., Paterson, N. J.

TEXTILE AUXILIARIES

FOR IMMEDIATE DELIVERY FROM OUR OWN STOCK

Rubber and brass rolls from 30" to 112" long in all diameters.
Sturtevant blowers #6 and #8.
Motors all sizes.
Dye jigs 50".
2—36" hydro extractors.
1—Button breaker 50".
Dye pads from 40" to 112".
28—Copper cans 80" wide.
Copper and steel dry cans 40" to 130".
3—4' Diameter x 46" face copper cans heavy gauge.
3—5' Diameter x 46" face copper cans heavy gauge.
SINGLE ROLL BATCHERS.
1—40" Sludge Extractor (Iron).
1—36" 3 roll hydraulic calender.
1—Brass pressure tank, 160 gals.
2—McClusky Filing System.
1—Prosperity Steam Press.
1—GE Generator—100 Kva, 220 Volts, 3 Ph. Speed 900.
1—Paper Press 35" x 45".
2—Compressors abt. 25 cu. ft. complete.

TEL. DEXTER 9650 **15 ORMSBEE AVE.**

PROVIDENCE, R. I.

COMPRESSORS
Vacuum Pumps

New & Guaranteed Rebuilts
Stationary & Portable

SALE OR RENT

Low Pressure Compressors for Air Moistening.

AMERICAN AIR COMPRESSOR CORP.
North Bergen, New Jersey
N. Y. Phone Ch 4-7665. N. J. Phone Union 5-4848

TEXTILE EQUIPMENT

FOR SALE

COMPLETE COTTON SPINNING MILL

10,000 Spindles — Spinning 10 to 24s Count

1—8000 Spindle Cotton Yarn Mill

1—8000 Spindle Cotton Spinning & Weaving Unit

ALL ARE IN OPERATION AND MAY BE INSPECTED!

SPECIAL OFFERING OF

NAPPERS

1—92" Davis & Furber Napper, 30 roll

2—90" Woonsocket Nappers, 30 roll

5—86" Woonsocket Nappers, 36 roll

1—80" Davis & Furber Napper

2—86" Felters Woonsocket, 24 roll

1—Napper roller grinder

CARDS

2—54" x 60" Davis & Furber Cards, 3 breakers, 9" workers, 5" strippers, 20" ring doffers

SPINNING EQUIPMENT

12—Tweedale & Smalley 7x3½ SPEEDERS, 160 spindles each

9—Howard & Bullough SPEEDERS, 7x3½, 160 spindles

38—Whitin 5½" gauge TWISTERS, 128 spindles each.

7—Fales & Jenks 5½" gauge TWISTERS 128 spindles each

2—Foster #30 WINDERS, 100 100 spindles each

5—Universal #50 WINDERS, 6 spindles each

EXCELLENT FINISHING EQUIPMENT

1—Butterworth 50" DYE JIGG, Stainless Steel, with motor

1—Van Vlaanderen 54" QUETSCH, 2 roll, ball bearing, rubber rolls with motor

1—Van Vlaanderen 5 tier 4 section CONVEYOR DRYER, 60" face, motor driven fans, airfin heating units.

1—Proctor & Scharwtz LOOP DRYER, 30' length, sticks 7' 1", 4 overhead fans

1—Hennekin TUBER, 50", 1 rubber covered roll, ½ HP motor

2—52" Elliot & Hall FLAT FOLDERS

1—Butterworth 90' TENTER FRAME, 50", 15 HP motor, steam coils, brass clips.

1—Winsor & Jeraul 40' TENTER FRAME

2—80" STEAMING MACHINES, equipped with pleating device

2—80" Double Teasel GIGS, with 7½ HP motor

1—Set Horizontal DRY CANS, 23 Copper Cans to set, 105" wide.

1—Set Vertical DRY CANS, 40 Copper Cans to set, 105" wide.

4—DYE JIGGS, 54"

1—56" Examining & Measuring Machine

CIRCULAR RIB KNITTING MACHINES

23—10" to 16", 10 and 11 Cut, 8 feed

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1—RAILWAY TRACK PIECE GOODS SEWING MACHINE

72" wide—Emerson Motor
1/10 HP, 110 Volts, 1750 RPM

ITEMS 998E & 999E

2 WHITIN QUILLING MACHINES

304 Spindle—3½" Gauge 10½" Traverse—Model "J"

ITEMS 1244-1245

2 CAVAGNARO EMBOSSING MACHINES

Large Heavy Type 3 Roll Machine—But No Embossing Rolls Included—Takes 60" Goods

ITEM 12208

CAN DRYER

29 Tinned Steel Cans 144" Face x 24" Dia. Butterworth—3 Section Vertical

ITEM 9866

BOIL OUT MACHINE

Includes Pumps & Foxboro Temp. Clock—Also Roll Up Machine—72"

ITEM 10051

BAGGING or TACKING MACHINE

Will Take Cloth Up To 90" Complete with Folder & Sewing Machine & Motor

ITEM 9755

DEWING MACHINE

72"

ITEM 9841

WHITEN TAPE CONDENSER—NEW—COTTON

Model "C"—Serial 425000—Series—40" Width

ITEM H 1000

BACK WASHER DRYER

Taylor-Wadsworth—12 Cylinder

ITEM 6730

DOUBLING & MEASURING MACHINE

Parks & Woolson—#5599—Width 66"

ITEM J.B. 123

2 WORSTED 48" LISTER NIP COMBS

Ramsden & Stephenson—For Fine Wool—With Feed Boxes of 26 Fallers per Set

ITEM 9945

WOODEN CREEL

85½" High—108" Long—7" Spindle—Centers for 220 Ends—3¼" Spindle—Centers for 440 Ends—Takes Paper Tubes

ITEM 10190 R

1—3 CYLINDER C. & A. TIGER

All Belt Drive from 5 H.P. Motor—66" Wide

ITEM 9838

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Or Compressor made by Worcester Warp Compresing Machine Co.—48" wide with Jack Spool Stand—5 digit Veeder Root yardage counter—new lot of Jack Spools with 12" Heads

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McBride—300 Ends—Suitable for 4" x 8" Roving Bobbins—Equipped with Brake & Elec. Drop Motion

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66" Wide

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Open Width Type
Equipped with Both Reel & Spreaders

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AGER, Stainless steel Acid
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BEAMER, 60" Van Vlaanderen
BEAMER, 60" with Steaming Drum
BLOWER, New, Squirrel cage type
BLOWERS, R.C. 8x5¾" 350 cu. ft. per min.
BOILER, New York Gas, 3 HP 100 WP
BUTTON BREAKER, VV 50" & 70"
BELT, leather, 3 ply 28"x½"x70" long
CALENDAR, 4 roll, 50" hydraulic
COUNTERS, Veeder-root
DECATER, Gessner, Full 72"
DRY CANS, set of 16, 80"x23"
DRY CANS, 50"x23" vert. syphon, 19
DRYER, Skein, single truck
DRYER, P & S Airlay
DYE BECKS, Stainless steel 4' to 20' New
DYE TUBS, 6' wood, complete motorized
DYEING MACHINES, Smith Drum Paddle type
DYEING MACHINE, Smith Drum Pocket type
DYEING MACHINE, Smith Drum 60 Arm
DYEING MACHINE, Rochester Rotary 30"x20", 3 pocket, 20 lb. capacity
EXTRACTORS, Beam 50" & 60" BB
EXTRACTORS, Open top Tolhurst 40"
EXTRACTOR, Open top 30" American
FANS, Exhaust 3 blade propeller 30", 36", 48"
FLAT FOLDERS, Elliott & Hall adjustable
HOISTS, Budgit, 1 ton capacity
INFRA RED units complete with blowers
INSPECTION TABLES, 47"
JIGGS, monel lined 60" st. st. 50" & 60"
KNITTING MACHINE, Cooper 30"
LOOMS, Draper Model E 30", 40", 55"
LOOMS, C & K Heavy Duck Looms 76"
MEASURING MACHINE, P&W Model AWC
MOTORS, ¾ to 5 HP, AC/DC 220 volt
NAPPERS, 80", Woonsocket & McCreary
PAD, 3 roll Hydraulic
PAD, 2 roll 50"
PALMER 62"
PALMERETTE, 60" face, General Machine
PRINT MACHINE, 10" sample or ribbon
PUMPS, Nash Hytor #H5
QUETCHES, 2 roll, 50" and 60"
REEVES DRIVE, Ball Bearing #0
SCUTCHER, 50"
SEWING MACHINE, Arlington Bicycle
SHEAR, Hermas, 4 Knife 70" wide
SHELLS, Wooden, 48"—44"—42"
SQUEEZE ROLLS, 12"x10"
TENTER, 30' W.&J. 52" wide, spring clips
TENTER FRAME, Pin W & J, 30'x220" wide
TUBERS, Paterson variable speed motors
TUBER, VV with doubling attachment
WARP COMPRESSOR CREEL
WASHER, open 4 compartment, 60" wide
WASHERS, Slop, New Stainless steel
WASHER, GL Rope type steel & wood
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10—Crompton & Knowles, 1920 Model, duck looms motor driven with motor. Will weave 62" duck varying from 7 to 30 oz.

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One J. E. Windle 66" cloth winder and measuring machine. New 1933, A#1 condition.

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Dubied and C & F hand machines

14 and 16" BEDS.

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150 — Draper Automatic Looms for 40" goods, Roper let-off and ratchet take-up, Belt Drive.

38—C and K 4 x 1 Worsted Box Looms Warp Stop Motions, Feeler Motion, 25 Harness Dobby, Motor Driven with motor and Flanged Beam.

20—Crompton and Knowles Automatic looms 4 x 1 with 20 harness dobbies to weave 40" goods

8—Ribbon looms with dobbies. 15'6" with double set of battens, one set for making Boucle fringe, the other set of battens for regular ribbon work

60—Draper Automatic Looms for 60" goods, equipped with Roper let-off and ratchet take-ups, Belt Drive

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10—Crompton and Knowles 4 x 4 48" Jacquard Looms, individually motor driven

20—Crompton and Knowles 2 x 2 48" Jacquard Looms, individually motor driven

50—Crompton and Knowles 600 hook double lift Jacquard machines

52—Crompton and Knowles motor driven Looms 4 x 1, equipped with dobbies, Warp stop motion, pick clocks, temples, beams, etc., 51½" Reedspace

74—2 x 1 same as above all for 48" cloth space

#90 Universal quillers or coppers, with or without bunch builders belt driven or motor driven

Sipp or Eastwood warpers and creels, 83" and 72"

3—Atwood 5Bs Double twisters, motorized, 100 spindles, 6 End

Numerous lots of spools, various sizes—all wood, wood and metal, and fibre and wood etc.—of different size head and traverse

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100 Draper loom beams. 44"-18" Heads.

2,000 Self stacking steel spool racks. Wide spacing, 3½" between pins. 4" 4½".

300 Aluminum skein drying tubes 54"

1—Motorized Buffalo Blower.

1—Motorized American Humidifier.

Spools, Quills, Bobbins and Etc.

40,000 fibre head spools 3⅜" trav., 3" head

50,000 3⅜" trav., 2½" head

7,000 fibre head spools 4⅜" trav., 3½" head, 1⅞" bar.

7,500 decorated metal head 4¼" trav., 3" head

10,000 composition heads 6" trav., 4¼" head

5,200 fibre head spools, 3½" trav., 3½" head

10,000 fibre head spools 3⅝" trav., 2⅛" head

2,300 fibre head spools, 4⅜" trav., 3" head

6,000 stainless steel take up shafts fixed pin. 3¼" trav., 2¾" head

15,000 metal head 3½" x 3

10,000 metal head 3⅝" x 3

20,000 wood quills 7" metal spray

60,000 wood quills, step type, 6½" like new.

58,000 wood quills, some with metal spray 6½"

60,000 3 ring automatic bobbins 7⅜"

800 Bakelite 5 B spinner spools 6" trav., 3½" head

455 5B Bakelite spinner spools, 6" trav., 4" head

5,000 3⅝" trav., 2½" head

7,500 bakelite 5B spinner spools, 5⅛" trav., 2¾" head

2,500 fibre head spools 4" trav., 3½" head

2,000 fibre head spools 4" trav., 3" head.

40,000 fibre head spools 4⅜" trav., 4" head

5,000 bakelite take up shafts, 4¼" trav., 5" head, 2¾" barrel 7/16" hollow tube mushroom gudgeon.

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5 TRICOT Knitting MACHINES

3 GERMAN 180" MACHINES

1 ENGLISH 144" MACHINE

1 ENGLISH 180" MACHINE

All 28 gauge, individually motorized with 1½ H.P. motors—all can be used for rayon, silk, cotton and nylon. All double bar—have interchangeable ends, rack indicators and clocks. *All machines now in operation. In excellent condition.*

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DRY BOX—VAN VLAANDEREN SILK NET DRYER

52' long 7'7" wide. Operates at 275°

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18" cylinder 8 feed machines in good condition and now in use.

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High speed, separate beam drive. Excellent condition. 8 yd. head.

SIPP-EASTWOOD MAGAZINE CREEL

1624 ends plus 1624 transfer. Electric stop motion.

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WANTED

WILTON CARPET LOOMS

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Complete Chenille Rug Equipment

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SPINDLE OR SLUBBER

WANTED

One 72 Spindle 11x5½ or 12x6 Saco Lowell Slubber.

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WARPER with CREEL

One Edge Warper with Creel 2⅝"—3" between centers also one extra creel same but about 450 pins also fibre head bobbins 3½" traverse 1¼" barrel, fibre head 13/64" thick, also bobbin boards wood or metal, also Anchor bobbins.

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1—**CARD** Single Cylinder 45" x 48" with Condenser.
2—**CARDS** 4 cylinder units 48x48 with Automatic Hopper, Feeders, Breasts, intermediate feeds, rubb condensers.
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2—**FEEDS** 40" and 54" as used on Cards.
1—**FEED** Apperly 60" with feed rolls for Card.
4—**GILL BOXES** Baller type Single Head, Double Delivery.
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13—**LOOMS** C&K 47" R.S. 6 harness, motor driven.
1—**LOOM** Fletcher 6 Space for Narrow Fabrics ⅛" to 1⅛".
11—**LOOMS** C&K 82" 4x1 automatic, 25 harness worsted head motions, complete.
4—**LOOMS** C&K 82" 4x1 automatic, 20 Harness worsted head motions, Bijur self lubricating, complete.
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1—**MULE** 264 Spindles 2" Gauge.
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4—**SLUBBERS** 11x5½ 56 and 64 spindle units.
8—**SPEEDERS** 8x4, 8x3½, 160 spindles each.
12—**SPEEDERS** 7x3½, 176 Spindles each.
2—**TWISTERS** 200 Spindles each 5" Traverse, 3¼" Gauge, 2¼" Ring.
40—**TWISTERS** 96 Spindles each 5" Gauge, 4" Ring, tape drive.
5—**TWISTERS** Fancy 192 and 200 Spindle units 3" & 3½" Gauge, 2" and 2¼" Ring.
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2—**FOSTER TUBE WINDERS** 80 Spindles each motor driven.
2—**Lazenby COP** Winders 20 spindle units cop 12"x1½"
2—**Lazenby** Winders 30 spindles each for 8¾" bobbin.

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2—**CALENDERS** Embossing 54" Face, 2 roll units.
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2—**COTTAGE STEAMERS** 12' long each equipped with valves etc.
2—**DECATURS** Full 72" unit with pumps etc.
4—**DOUBLERS** 60" and 66" units on open roll equipped with clocks.
1—**DRY CAN SET** 6 Cans 72"x36" Copper cans.
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Near 138th Street

2—**DRYERS LOOP** 84" fans and heating system.
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11—**Bahnson HUMIDIFIERS** with 220/3/60 cycle motors.
1—**INSPECTION** Machine 90" cloth with measuring clock.
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100—Wardwell 16 carrier high speed braiders

90—Triple decker textile make wire braiders

Various other equipment

TWINE MACHINERY

2—Haskell & Dawes 2 Spindle 8" x 10" Formers

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TEXTILE MACHINERY

1—72" Auto Feeder, new apron

3—48" Extractors, belt drive

2—Rub Condensers, 48" with ring doffer cyls. 20" x 48", sixty ends, two banks

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1—Eight - String Piece Dye Kettle (good wood)

1—Four-String Piece Dye Kettle (fair)

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20—Universal Model 90 Winders

Cable Address

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Two—Reading footers, 24 section, 42 gauge. Reinforced selvage motion and clocks. Long needles.

One hundred—Scott & Williams Hosiery Machines, "K", 320 needles.

Four—Brinton Terry cloth machines, 16", 12 feeds.

Twenty—Wildman Anklet knitting machines. 4½" style "K", auto stop motions. 24 and 36 gauge, 2 cut.

Three—Scott & Williams knitters, 14", 8 feed. Auto stop motion, 1124 needles.

Two—Grosser 20" flat beds.

Twenty—Flat bed hand knitters, 14" to 43".

FS-842, Textile World

330 West 42nd St., New York 18, N. Y

FOR SALE

WILDMAN 28 CUT

SPRING NEEDLE MACHINES

NUMBER OF FEEDS	CYLINDER SIZE
6	11"
8	12"
8	13"
8	14"
10	15"
10	16"
10	17"

FS-818 Textile World

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FOR SALE

LOOMS

68—Stafford Motor-driven Shuttle Changing Looms with 25 Harness Dobby Heads—36 are 70" Reed space—32 are 54"—complete ready for immediate delivery.

PAWTUCKET MILL SUPPLY CO.

240 York Ave. **Pawtucket, R. I.**

QUILLERS #90 UNIVERSAL

20 Spindles per machine, in excellent operating condition.

SIPP - EASTWOOD WINDERS

100 Spindle with cone shaped tailed spools.

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OPENING AND PICKING

6—Vertical Openers—Saco-Lowell, H & B, Woonsocket
3—Whitin Downstroke Cleaners, ball bearing, 1927 model
3—Lummus 3 Gate Gyrators
1—39" Harwood Automatic Hopper Feeder
1—39" Whitin Automatic Hopper Feeder
1—38½" Kitson Feeder, with Apron
1—Davis & Furber 30" Shoddy Picker

CARDS & COMBERS

1—Dobson & Barlow 45" Flat Top Waste Card, with Breast
44—Whitin Combers, 11" and 12" Coilers
7—Ribbon Lap Machines, Whitin
7—Sliver Lap Machines, Whitin

ROVING

11—11 x 5½" Slubbers, Woonsocket, H & B
2—9 x 4½" Intermediates, Woonsocket
41—7 x 3½" Speeders, 172 Spindles, Whitin, H & B, Woonsocket, Saco-Lowell, Saco-Pettee

WINDERS

52—#90 Universal Winders, Disc Quill Tensions, Belt Driven
8—Foster #12 Cone Winders, Semi-Hi Speed, 100 Spindles each
6—#50 Universal Winders, Tubes or Cones
3—Foster #25 Doublers, Multiple Wind, Motor Driven

LOOMS

300—Draper Model X Looms 44½" Reed Space, Lacey and Roller Tops, Motor Driven
24—Draper Model HC 76-½" Reed Space, Knowles Worsted Heads, Motor Driven
11—Crompton & Knowles 4 x 1 Box Automatic Looms, 82" Between Swords, with Dobby Heads, Arranged for Motor Drive
254—Draper Model K Looms, 44" Reed Space, Stafford Thread Cutters, 25 Harness Dobbies, Motor Driven
60—Draper Model K Looms, 40" Cloth, Stafford Thread Cutters, Operating From C & K 600 Hook Jacquard Heads
10—Draper Modified D Looms, 65" Reed Space, Roller and Dwight Tops, Belt Driven
100—C & K 52-½" Reed Space, 20 Harness Double Index Dobbies, Non-Automatic
38—Stafford, 100" Reed Space, Automatic Shuttle Change, Motor Driven
24—Draper Model P Looms, 49" Reed Space, Roper Let-Off, Belt Driven
96—Draper Model K Looms, 48" Reed pace, 25 Harness Dobbies, Motor Driven
32—Draper Model D Looms, 48" Reed Space, 25 Harness Dobbies, Motor Driven
86—Draper Modified D Looms, 49" Reed Space, 42 with Dobbies, 44 Cam Looms with Dwight Tops, Belt Driven
40—Stafford Automatic Looms, 68" Reed Space, Roller Top
33—72" Stafford Auto. Shuttle Change Looms for heavy draperies on upholstery fabrics. Motor driven.
8—48" CTK. 4x4 Box Worsted Looms, Gem Intermediate Heads, motor driven.

1—Set 40 New Butterworth Stainless Steel Cans, 23" diameter by 130" face, vertical frames, roller bearings, individual traps, siphons, etc.

TWISTERS

6—Collins Tape Drive Twisters, 4½" Gauge, 3" Rings, 152 Spindles, 1921 Model
1—Brownell Fly Twister, 96 Spindles
3—Saco-Lowell Jack Twisters, 3" Gauge, 1-⅝" Rings, Tape Drive, Using 50" Jack Spools, 18 Ends Per Spool, Motor Driven. 1924-28 Models.

WASTE MACHINES

1—Kitson W3 Waste Machine, 3 Cylinders
1—Whitin Model "A", 3 Cylinder Hard Waste Machine, 1927 Model.

THIS IS ONLY A SMALL PART OF LOOMS AVAILABLE—

We Also Have Available—

BLOWERS, MOTORS, SWITCHES, PULLEYS, HANGERS, MACHINE SHOP EQUIPMENT, GENERAL MILL SUPPLIES

FINISHING

300—Copper Dry Cans, 23" Diameter by 50" Face, Vertical Frames, Removable Journals, Siphon & Bucket
1—Set 36 Copper Horizontal Dry Cans, 30" Diameter by 86" Face
1—Set 22 Cans, Tinned Copper, 23" Diameter by 66" Face, Horizontal Frames
1—Set Butterworth New Stainless Steel Cans, 17 Cans, 23" Diameter by 45" Face, Vertical Frames, Roller Bearing, Individual Siphons, Traps
1—46" Granger 3 Roll Friction Calender
1—Butterworth 5 Bowl Calender, 44½"
1—Sargent Raw Stock Wool Dryer, Model M, 97" Wide 24' Long, Wire Screen Mesh Apron, Equipped with 4 Fans, Belt Driven.
1—Butterworth ¼ Ton Experimental Laboratory Type Steel Kier, Complete with Pump, Motor Driven
4—50" General Machine Company Stainless Steel Dye Jigs, totally enclosed Gearing.
10—60" Stainless Steel Dye Jigs, Stainless Steel Expanders Individual Motor Drive.

MISCELLANEOUS

1—Cohoes Starch Mixing Kettle, 42" x 42", with Double Acting Agitator
2—48" Tollhurst Extractors, Copper Basket, Overhead Belt Drive
1—Schaum & Ulinger 48" Extractor, Copper Basket, Motor Driven
2—Curtis & Marble 42" Shearing Machines
1—Hermas 4 Blade Shear, 1936 Model with Curtis & Marble Brusher, for 48" Cloth, Motor Driven.
1—Curtis & Marble Brusher, 44", Equipped with Rolling Up Head
1—60" Curtis & Marble Sewing & Cloth Rolling Machine, 1934 Model.
1—Termaco 3207 Roving Bobbin Cleaner, will take up to 12" Bobbin, Belt Driven
1—Saco Lowell Card Stripper connected to Sturtevant #7 Blower, Motor Driven
2—Davis & Furber Mules, 2.08 Gauge, one 350 spindles, one 355 spindles, accelerated spindles, 1916 model.
8—Davis & Furber Mules, 2" Gauge, one 264 spindles, three 288 spindles, four 312 spindles, accelerated spindles, belt driven.
1—78" Sucker Hot Air Slasher. New Machine. 6 pass. 78" headway complete with Beaming Machine.

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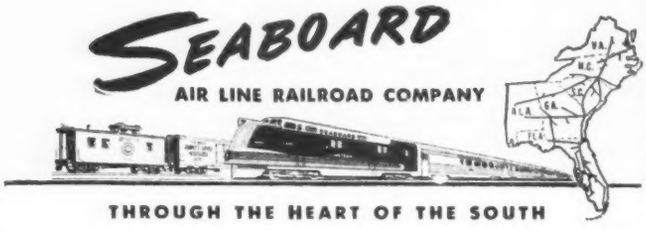

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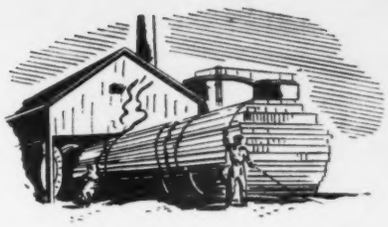

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Whatever your needs —

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1. Wolmanized Lumber* — protects against decay and termite attack.
2. Minalith — fire-retardant.
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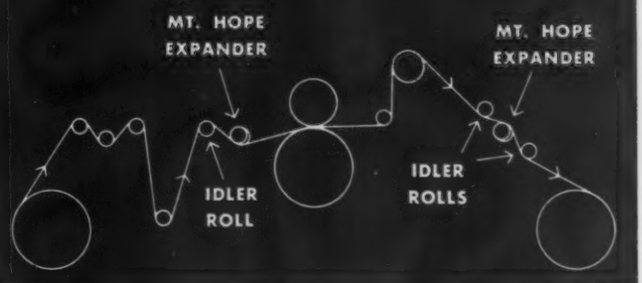
Mount Hope Free-Wheeling EXPANDER



AS USED WITH HYDRAULIC CLOTH CALENDER

The diagram herewith shows an installation in a prominent New England plant that has approximately 20 Mount Hope Free-Wheeling Expanders in use at present, and plans to add more as other types of expanders now installed wear out.

The expanders shown are used to assure maximum width and smoothness, first before the cloth enters the nip rolls of the calender and second before it is rolled at the end of the operation. Mount Hope Expanders are also used in a similar manner on most of this plant's other machines.

The roll of the Mount Hope Expander is Neoprene covered and ball bearing mounted. It is so free turning that it can be used for expanding delicate fabrics like rayon marquisette without putting too much tension on the warp. As many as 6 of them at one time have been used on cotton marquisette in front of a stack of dry cans, thus producing exceptional crosswise stretch.

The minimum tension on the warp greatly reduces the tendency of the cloth to contract in width, and also increases the life of the Neoprene surface, because less drag is required to turn the expander.

Expanders can be set at any angle to the cloth.

Ball bearings, grease packed, are securely mounted in steel spools to outlast many Neoprene sleeve coverings, and so designed that they can not stick nor turn on the axle and cut it.

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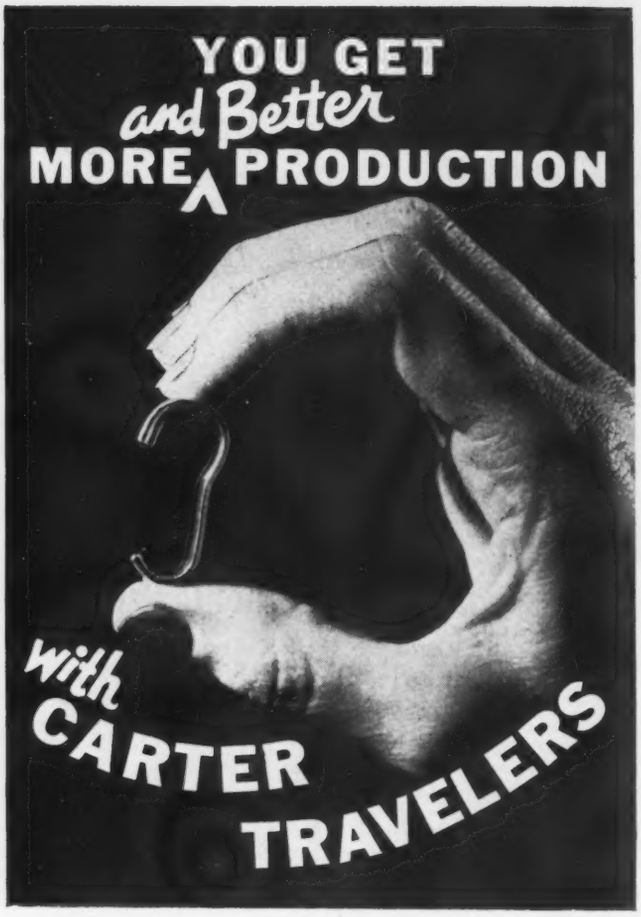

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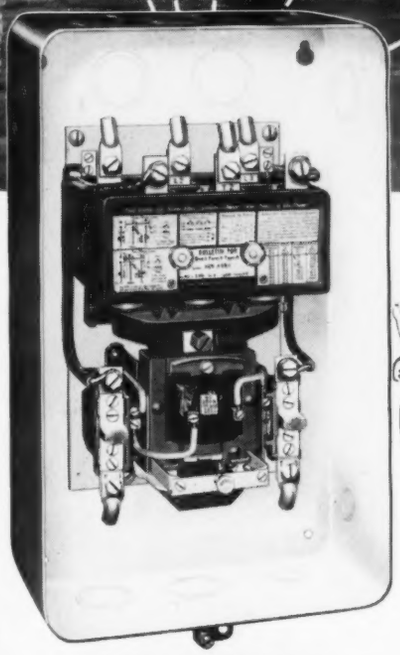
good for *MILLIONS* of trouble-free operations!

Velon extrusion units at Firestone extrusion plant, Paterson, N. J.



BULLETIN 709

Bulletin 709, Size 2 across-the-line solenoid starter with cover removed to show mechanism. Note the simple solenoid mechanism and the white interiors.

YOU CAN INSTALL ALLEN-BRADLEY SOLENOID STARTERS ... *AND FORGET 'EM!*

Only one moving part . . . double break, silver alloy contacts that never need maintenance . . . no pivots, pins, bearings, or flexible jumpers to cause trouble . . . these are some of the reasons why Allen-Bradley Bulletin 709 solenoid starters have become so popular in textile mills. These starters are easy to install, too. The white cabinet interiors reflect light in dark corners, there is generous space for wiring, and all terminals are easily accessible. Or better still, use the Bulletin 712 combination starter which combines the disconnect switch and automatic starter in one cabinet. Allen-Bradley Company, 120 W. Greenfield Ave., Milwaukee 4, Wis.

A-B Quality

ALLEN-BRADLEY

MOTOR CONTROLS FOR TEXTILE MILLS

QUALITY

This new design is really a *wheel within a wheel.* And when the inner and outer wheels click into the locked-together position . . . then you have the greatest protection you can get against mechanical overthrowing.

This new protection is available only on Veeder-Root Pick, Hank, Yardage and Knitting Counters of the 2–3 type. And it's new proof that you can count on Veeder-Root to develop . . . first . . . the important advances in production *Count*rol for modern-minded textile mills. Ask your Veeder-Root Field Engineer . . . or write the nearest Veeder-Root office . . . for full details on the new Inner-Locking Wheel.

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